



State of Utah

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## **MEMORANDUM**

To: Tesoro Refining and Marketing – Waxy Crude Processing Project, Transport Loading Rack Project - Source Files 103350058-12 and 103350059-12

Through: Marty Gray, New Source Review Section Manager, UDAQ

From: John Jenks, Engineer, New Source Review Section, UDAQ

Date: August 22, 2012

Subject: Response to Public Comments

### **Introduction**

Approval Orders (AO) for Tesoro Refining and Marketing (Tesoro) were proposed for the Waxy Crude Processing Project and the Transport Loading Rack Project. A public comment period for both actions ran from February 21 thru June 7, 2012. The comment period was extended twice. The first extension was at the request of the public for more time to review; the second extension was to accommodate statutory changes from the 2012 legislative session to avoid confusion on the process. A public hearing was held on April 17, 2012 in accordance with R307-401-7. Public comments were received at the hearing and throughout the comment period.

The Intent to Approve (ITA) for this project was properly noticed and all information related to this project was available for public review during the comment period. The comments received are identified below along with UDAQ's response to the comment.

### **Comments**

**UDAQ General Comment #1: NOTE TO THE READER:** In general, most comments that were submitted included various acronyms, contractions and 'terms of art' that are in general use in the field of air quality. Often these are not defined in the submission.

Whenever possible, UDAQ has attempted to define any specific terms used in this response to comments memorandum. However, most definitions, terms, abbreviations, and references used in this memorandum conform to those used in the UAC R307 and 40 CFR. Unless noted otherwise, references cited refer to those rules. As it is possible that a specific term may have been overlooked, and for the ease of the reader, UDAQ is attaching a commonly used acronym list to this document.

### **Numerous comments were received from Western Resource Advocates on behalf of Utah**

**Physicians for a Healthy Environment, Utah Moms for Clean Air, the Utah Chapter of the Sierra Club and Western Resource Advocates (collectively “Western Resource Advocates or WRA”). The comment letter also included twelve (12) attachments. UDAQ has not repeated the entire text of the letter and attachments in this response to comments, although these documents can be found in full in the file for these permitting actions (projects N103350058-12 and N103350059-12). In general, UDAQ has attempted to include the full text of any specific comment, although particularly long or compound comments may have been paraphrased or split for ease of reading and brevity concerns. Where this has occurred, UDAQ includes a notation. The comments from the WRA are reflected below.**

**Comment #2: “The refinery (and refineries in general) actually emits many times the amount of pollution, VOCs and HAPs in particular, than is reported to UDAQ.”**

**UDAQ Response:** This comment was submitted as a general comment from the “Air Pollution Consequences of Utah’s Refineries” subsection of the “Health Impacts of Air Pollution” introduction of WRA’s comment letter. The comment stems from an April 22, 2010 Associated Press report, which was further based (at least in part) on a July 27, 2007 EPA internal memo regarding the fugitive emissions of VOCs from refineries. This memo addressed a possible concern based on estimating the emissions from refineries located in Europe and Canada, and then comparing these emission values to the reported values from refineries located in Texas and California. WRA did not include either the EPA memo or the AP article for reference. UDAQ has located these documents and included them as attachments to this response memorandum.

The EPA memo hypothesizes that emissions from refineries are generally being underestimated due both to outdated measurement techniques, as well as to omission or exclusion of emissions from singular events – such as breakdowns, startups, shutdowns (collectively SSM), leaks from piping and sewer systems, and tank degassing. The memo discussed that general refinery VOC and HAP emissions could be measured using a ‘differential absorption light detection and ranging system’ and the extrapolated results could then be compared to what this same refinery reported in its emission inventory, and that the results could then differ by as much as 10-20 times for a given pollutant.

There are several problems with attempting to apply a general and somewhat generic newspaper story to a particular refinery, in this case Tesoro’s Salt Lake operations. The first, as the memo itself explains, is that the studies performed (in Canada and Europe) appear to match fairly closely with EPA’s own emission factors (published as AP-42) and hence questions the assumption of under reporting of emissions. Second, attempts to extrapolate hourly data to represent annual emissions are flawed given the relatively short sampling period and the inherent assumption that this short sampling period constituted a representative period to extrapolate an annual emissions rate for the refinery being measured. There is a third problem of using measurements from one set of refineries, comparing these values to those reported by a second set of refineries, and then attempting to extrapolate this information to match all refineries as a general concept.

The second and third assumptions are more problematic. The assertion that refinery emissions are under-reported is based on EPA’s assumption that refineries are omitting or mischaracterizing significant emissions such as those mentioned above. The Tesoro refinery has in fact reported emissions from SSM

events and includes estimates of emissions from leaks, sewer systems and other fugitive emissions, and has included VOC emissions from leaks at all affected components as part of its NOI submittal (see Appendix B.2.12 of the NOI in particular).

A news article of questionable relevance is an improper basis for a comment. As this comment raised no technical or procedural concerns with the two ITAs or the source plan reviews behind them, no changes were made.

**Comment #3: “Expansion of refinery capacity will increase breakdown related emissions which is acknowledged in the Tesoro’s [sic] NOI. ‘There will be an increase in potential emissions from startup, shutdown, and malfunction events as a result of installing larger vessels at the VRU.’ This appears to be unaccounted for in the predicted emissions from Tesoro’s project.”**

**UDAQ Response:** UDAQ disagrees with this comment. Startup and shutdown emissions were included in the analysis (see NOI Sect B.1.4 and Attachment B-33 and response to comment #15 below). All limits of the permit apply at all times, which include periods of startup, shutdown and malfunction. The ITA contains no exclusion for these events. Breakdown emissions are not included in the projections as they cannot be quantified. There is no requirement to include these breakdown emissions in the analysis and the commenter does not identify any such requirement. Therefore, the ITA properly accounted for all emissions, and no changes were made.

**Comment #4: Summarizing the next comment, “...Salt Lake County is currently failing to meet the NAAQS for SO<sub>2</sub>. Salt Lake and Utah counties are non-attainment for the PM<sub>10</sub> NAAQS. Salt Lake and Davis Counties are in non-attainment status for PM<sub>2.5</sub>. Finally, the Utah governor has requested that EPA declare Salt Lake, Davis and part of Weber County as not meeting the 8-hour ground level NAAQS for ozone, or smog. Although this request was recently recalled, it shows that levels of ozone pollution in the valley hover close to the NAAQS. The violation of ozone standards is particularly relevant to refinery emissions because VOCs are a precursor to ozone.”**

**UDAQ Response:** The comment refers to the general state of air pollution, and not with any specific aspect of either the ITAs or the underlying source plan reviews. UDAQ is currently developing a SIP for PM<sub>2.5</sub>, and the contribution to the valley airshed from the Tesoro refinery will be part of that evaluation.

UDAQ processes NOIs and issues AOs based on existing regulations. All requirements from the PM<sub>10</sub> and SO<sub>2</sub> portions of the Utah SIP which pertain to the Tesoro refinery have previously been incorporated into the AOs issued to Tesoro, and such language remains in place in this most recent ITA. This AO will require compliance with rules consistent with the attainment status of the airshed where Tesoro is located. As this comment raised no technical or procedural concerns with the two ITAs or the source plan reviews behind them, no changes were made.

**Comment #5: “Health Impacts of Air Pollution”**

*For the sake of brevity, UDAQ has elected to not include the entire text of this comment as it encompassed several pages of the submitted comment letter, and required numerous referrals to included reference documents. The complete comment begins on Page 4 of the comment letter under the heading of “Health Impacts of Air Pollution” and ends with the second paragraph on Page 8 of the letter.*

**UDAQ Response:** UDAQ evaluates and reviews permit applications against current air pollution standards. These standards, established by the EPA, are health-based standards (see <http://www.epa.gov/apti/bces/module7/title1/title1.htm> - an EPA webpage that addresses the history and bases for the establishment of NAAQS). Concerns about the adequacy of those standards should be addressed to the EPA. UDAQ's review has determined that the project as proposed in the ITAs meets all applicable requirements. The comments are otherwise noted. However, as this comment raised no technical or procedural concerns with the two ITAs or the source plan reviews behind them, no changes were made.

**Comment #6: “UPHE is very concerned about the acknowledged almost [sic] 9,000 more lbs of HAPs that will be emitted from this project, including 479 lbs. of benzene, 2,660 lbs of hexane, 822 lbs of toluene, and 475 lbs of xylene.”**

**UDAQ Response:** UDAQ is aware of the HAP emissions associated with this project. R307-401-5(2)(b) requires Tesoro to submit an estimate of the actual emission increases of HAPs, and this information can be found on pages 59 and 60 of the revised NOI. UDAQ evaluates HAP emissions under the provisions of R307-410-5, Ambient Air Impacts for Hazardous Air Pollutants. As discussed in subsection (1)(a)(i) of that rule, installations subject to or scheduled to be subject to an emission standard promulgated under 42 U.S.C. § 7412 (Clean Air Act Section 112 and included under 40 CFR 63) are exempt from the requirements of that rule. HAP emissions from Tesoro's refinery are controlled by federal NESHAP and MACT standards (40 CFR 61 Subparts A, M, FF and 40 CFR 63 Subparts CC, UUU, EEEE and DDDDD).

Although already discussed and documented on page 59 of the NOI, in early May 2012, UDAQ verbally requested additional detail and clarification on the status of each piece of equipment or process (either new or existing) affected by the project, with respect to its being subject to 40 CFR 63. Tesoro provided this information in a supplemental addendum on May 17, 2012. A copy of this submittal is attached to this memorandum. The comments are otherwise noted, no changes were made to the ITAs.

**Comment #7: “Nowhere in the NOI or the ITA is there any acknowledgement of or accounting for the increase in diesel emissions from hundreds of truck trips bringing in the black wax crude substrate. Those emissions have profound health impacts. Two ground breaking studies on the toxicity of diesel emissions revealed that long-term exposure to even low levels of diesel exhaust raises the risk of dying from lung cancer about 50% for urban residents, and about 300% for occupationally exposed workers (Tesoro employees).”**

**UDAQ Response:** UDAQ's New Source Review Program is derived from Title I of the CAA. Title I addresses only major stationary sources and major modifications to stationary sources; Utah's SIP has expanded this program to include minor stationary sources and minor modifications to stationary sources. The CAA Title II, Emissions Standards for Moving Sources, addresses vehicle-based emissions, also known as mobile emissions. As mobile sources do not constitute a stationary source for regulation under Title I of the CAA nor UDAQ's NSR permitting rules (R307-400), there is no requirement to address mobile source emissions as part of this permitting action, and the commenter identifies none. Accordingly, no changes were made to the ITAs.

**Comment #8: “UPHE is disturbed by the document distributed at the public hearing on the Waxy Crude Project entitled “Tesoro Refinery Expansion: Frequently Asked Questions.” It is**

**inappropriate for the DAQ to provide the economic rationale behind Tesoro's request to expand, and it is inappropriate for the DAQ to speculate that improved profitability for Tesoro will result in future, unspecified and uncommitted improved pollution control at their facility."**

**UDAQ Response:** UDAQ provided the document in question as a courtesy to the members of the public attending the public hearing. UDEQ Public Information Office staff had received numerous requests for additional information during the entire review process and made this information available on its website. Paper copies of the same information were made available at the hearing. The document in question was not the basis for any decision associated with the review of the NOI or the development of the ITA. The comments are otherwise noted; however, as no technical or procedural concerns were raised with respect to the two ITAs or the source plan reviews behind them, no changes were made.

**Comment #9: "Moreover, this information is skewed, in that no economic cost to the refinery's pollution is acknowledged. The EPA and many other entities have attempted to quantify the economic cost of pollution. For example the state of Utah sponsored a study whose conclusion was that the pollution from the state's coal fired power plants caused about \$2 billion dollars [sic] in pollution related damages, and over 200 deaths per year."**

**UDAQ Response:** As stated in response to comment #8, the information in question was provided as a courtesy and does not represent or replace UDAQ's analysis of the NOI. UDAQ reviewed the NOI with respect to the air quality rules and regulations that govern such a project. The commenter goes on to state that:

*Despite the fact that this agency is mandated to protect public health, nowhere in either the NOI, or the ITA is there any attempt to quantify or understand the health consequences of this refinery's current emissions, or how much they would change from the proposed expansion. Yes, there are calculations of pollutants in tons, but there is no attempt to calculate the public health cost, the human cost of those tons of emissions. Ironically, the agency mandated to protect us from pollution made no attempt to inform the public what the health consequences are, and they declare such impacts simply as "not significant."*

UDAQ disagrees with this comment, as the project was evaluated within EPA's health-based standards using the air quality rules and regulations established to protect those standards. Please also see response to comment #5. Further, the commenter does not identify any requirement that UDAQ failed to address. In addition, the commenter mischaracterizes the word "significant" by taking a statement from the ITA abstract and using it out of context. The statement in question reads as follows: "the project will not result in a significant emissions increase or significant net emissions increase in air emissions and is considered a minor modification under both PSD and nonattainment area NSR." In this case, R307-101-2 defines "significant" as a net increase in the rate of emissions from a source which would equal or exceed certain pollutant-by-pollutant values (see R307-101-2 Definitions – "Significant"). This defined term serves a specific regulatory purpose by defining the scope of the project by the size of the emission increase. The comments are otherwise noted; however, as no technical or procedural concerns were raised with respect to the two ITAs or the source plan reviews behind them, no changes were made.

**Comment #10: "The record is almost devoid of independent analysis of the factors that by law must be considered and incorporated into the Executive Secretary's permitting decision. Indeed, the Executive Secretary's entire review of the Waxy Crude Project is limited to a few pages, much of which is a verbatim repetition of the analysis put forward by Tesoro. As the Executive Secretary**

**is required to undertake independent review of the permittee's data, claims and analysis, the decision reached in the ITA is necessarily legally inadequate. In other words, because the record lacks a basis for the state's decision, the ITAs are legally deficient."**

**UDAQ Response:** This is a general statement, with a more specific listing and coverage of individual assertions to follow as separate comments. UDAQ will respond to the individual assertions in these subsequent comments. In general, however, UDAQ disagrees with the comment. The commenter seems to imply that because UDAQ agrees with an applicant's supplied "data, claims and analysis" that UDAQ therefore must not have independently reviewed the information.

UDAQ reviewed the NOI and raised numerous questions and requests for additional information as documented in the Permit History section of the source plan review document. These requests for information are also included in the public record. The majority of these requests for information were incorporated into the revised NOI submitted by Tesoro on December 21, 2011.

**Comment #10a: Utah Physicians Hereby References and Incorporates Any and All Comments Submitted by EPA on this Project.**

**UDAQ Response:** UDAQ disagrees with this comment. Utah Code Ann. § 19-1-305.5(4)(a) states that "...a person who challenges a permit order . . . may only raise an issue . . . that *the person* raised during the public comment period..." (emphasis added). This statutory provision states that a commenter may later raise issues that it had previously identified during the public comment period with enough specificity and support to allow meaningful consideration by the agency. Conversely, UDAQ is aware of no provision of law (and the comment identifies none) permitting one commenter to avoid the statutory responsibility of identifying issues itself by simply blindly incorporating by reference the comments of another, particularly when the commenter seeking to incorporate may not even be aware of the nature of the comments being proposed by another commenter until after the public comment period closes.

**Comment #10b: In Making These Comments, Utah Physicians is Necessarily Restricted to the Record Provided by the Executive Secretary.**

**UDAQ Response:** The commenter speaks of what it perceives to be gaps in the record it obtained through a GRAMA request. As a general matter, the commenter misunderstands the review process. In particular, the commenter claims that "... the adequacy of the . . . permitting decision must be evaluated based solely on that same record [as provided in the previous GRAMA request]."

At the time the Director issued the ITA, no final decision had been made on the proposed Tesoro project, so it is unclear what "permitting decision" the comment refers to. Based on the entirety of the comment, UDAQ assumes that it refers to the decision to release the ITA for public comment. In that case, the commenter fails to acknowledge that the issuance of the ITA is not a final agency decision, nor is it intended to be. The purpose of the comment period is to allow third parties to evaluate the ITA and provide comment. Utah Admin. Code R307-401-7(3) obligates UDAQ to consider those comments, and where appropriate, make changes to the ITA. Therefore, the adequacy of the record supporting the permitting decision will be based on the record as it stands at the time the final decision is made, and not (as the comment seems to suggest) at the time the draft permit was released for public comment.

The comment period is also a valuable method for alerting the agency to aspects of the ITA that may need additional documentary support or explanation. Through the process of responding to comments, UDAQ reviews its proposed decisions and where appropriate, will request additional information and support from the source or will provide further explanation for various aspects of the ITA. This is the exact purpose of the public comment period.

**Comment #10c: Should the Executive Secretary Decide to Supplement the Record or His Analysis in Any Way, the Public Must be Given the Opportunity to Comment on the Additional Material.**

**UDAQ Response:** UDAQ disagrees with this comment. As an initial matter, WRA provides no citation of applicable law to support the claim it makes in the comment. UDAQ is not obligated to hold an additional comment period, regardless of whether it supplements the record or its analysis. Section 19-1-301.5(8)(b) defines what constitutes the administrative record underlying a UDAQ-issued approval order. The statute does not impose a temporal restriction on when the agency may add information to the administrative record. See Utah Code § 19-1-301.5(8)(b)(vii) (stating that the administrative record includes “any information that is: (A) requested by and submitted to the director; and (B) designated by the director as part of the basis for the decision relating to the permit order,” but not imposing any time restraint on when the agency must receive the information).

Additionally, UDAQ regulations governing permits for new and modified sources vest the agency with discretion to modify a proposed approval order in response to public comment. This authority is found in rule 307-401-7 of the Utah Administrative Code, which directs UDAQ “to consider all comments received during the public comment period and at the public hearing and, if appropriate, . . . make changes to the proposal in response to comments before issuing an approval order or disapproval order.” This regulation only refers to one comment period, not more, and expressly directs UDAQ, where appropriate, to modify a proposed permit in response to public comment. Nowhere does the regulation mandate that UDAQ re-open the proposed permit to additional public comment when such changes are made in response to public comment, or when in the course of considering public comments, the agency adds to the record. Accordingly, not only is UDAQ permitted to add information to the administrative record in response to public comment and make changes to a proposed approval order following public comment, but Utah law does not require UDAQ to re-open the permit to additional public comment if the agency takes such an action.

The reason such supplementation is permitted is obvious. The ITA is a draft, not a final decision. If the agency is not permitted to alter the ITA based on public comment, then the public comments serve no useful purpose. It would be nonsensical to afford an opportunity for public comment if the agency were then held only to the review that lead to the issuance of the ITA, before public comment was solicited. Applicable law contemplates that additional information may be requested from the source and included in the record based on public comments, and that changes may be made to the ITA as a result. Under WRA’s claim, the public comment periods would never end.

Moreover, UDAQ cannot know in advance what public comments will say, and one of the purposes of a comment period is to bring new material to the agency’s attention. Consequently, it may be impossible for the UDAQ to respond without making use of new material, either obtained on its own or from the source. If all new material in a response to comment required yet another public comment period, “the agency would be put to the unacceptable choice of either providing an inadequate response or embarking on [an] . . . endless cycle of reproposals . . . .” 45 Fed. Reg. 33290, 33412/1 (May 19, 1980).

**Comment #11: “Insufficient information and analysis in the record to support the ITAs.”**

**UDAQ Response:** This comment is a near word-for-word repeat of the information included as comment #10 above. In fact, it appears to be a simple restatement of the same bulleted list. Therefore, please see response to comment #10.

**Comment #12: “There is no examination of the feedstock in the record, although such analysis is necessary to estimate projected emissions and otherwise evaluate the legality of the permit.”**

**UDAQ Response:** UDAQ disagrees with this comment. There is no requirement to conduct an “examination of the feedstock.” R307-401-5(2) identifies the information to be submitted with the NOI. Those requirements include the need to identify the nature, procedures for handling and quantities of raw materials. Tesoro included this information at page 8 and attachment B of its NOI. Refineries process multiple different crudes and crude blends. Crude from each different oil well can have a different chemical profile, and even the crude from a single well can differ from day to day. While it is true that different feedstocks can result in slightly different emission profiles, attempting to address every possible specific chemical profile would be impossible.

UDAQ must by necessity rely on estimates and averages as part of the reviewing process. The majority of the emissions generated by the refinery come not from the processed crude directly, but rather from the combustion of gaseous fuels used to heat those process units, and the emissions resulting from this combustion are well documented, understood and verifiable (see several sections of AP-42 as well as Tesoro’s own stack test results and CEM data provided in Attachment B of the NOI). The remaining emissions, such as those from storage tank off-gassing, piping leaks and equipment losses, are estimated. These estimates are standardized by both the industry as well as EPA, using such emission calculation programs as Tanks (version 4.09d was used by Tesoro, which is the most current version). The non-fugitive emissions are addressed by the specific requirements found in Section II.B of the ITA.

The commenter seems to imply that UDAQ is somehow responsible for determining Tesoro’s logistic asset capabilities, and whether the potential for increased corrosion had been considered by the applicant. This is incorrect. While UDAQ does impose a requirement that all process and control systems be “adequately and properly maintained” (see condition I.5 of the ITAs), UDAQ leaves the logistic aspects of day-to-day business to the company operating the business. If the applicant fails to install corrosion resistant piping and then needs to replace that pipe at some future date, that replacement would be the fault of the company, not of UDAQ. So long as the company continues to operate in a manner that meets all applicable air quality rules and regulations and all terms and conditions of its permits, UDAQ does not impose conditions relating to the possible impacts to the plant from using different raw materials, and the comment identifies no legal requirement to the contrary.

**Comment #13: “The Request to Relax the SO<sub>2</sub> Emission Limit on the FCCU Means that Under 40 C.F.R 52.21(r)(4), the Waxy Crude Project is a Major Modification.”**

**UDAQ Response:** UDAQ disagrees with this comment. There are a number of problems with this statement. To begin with, the reference to 40 CFR 52.21(r)(4) should actually be 40 C.F.R. § 51 Appendix S (IV)(F). The limit in question is a limit on SO<sub>x</sub> (SO<sub>2</sub>) emissions from the FCCU. As the commenter has pointed out, the refinery is located in Salt Lake County, which is a non-attainment area for



SO<sub>2</sub>. The provisions of § 52.21(r)(4) apply to PSD areas, or areas which are in attainment of the NAAQS. However, the language of Appendix S to Part 51 is essentially the same, differing primarily only in internal rule references. The exact language of the appropriate paragraph reads as follows:

*F. Source obligation. At such time that a particular source or modification becomes a major stationary source or major modification solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements of this Ruling shall apply to the source or modification as though construction had not yet commenced on the source or modification.*

UDAQ interprets this regulation to mean that should a limit previously taken to avoid major NSR be relaxed, say as part of a new project – then the entire project, including the original action which avoided major NSR, must be re-evaluated as though the entire project were being proposed now. In other words, the original project (or more to the point, both the original and the new projects, now combined as a single project) does not automatically become major, but that the entire combination project must be evaluated to determine its major or minor modification status.

This evaluation has already been completed, and the netting analysis submitted by the applicant already includes the emissions resulting from the relaxation of the limit at the FCCU. Indeed, because the source could therefore choose to pick a baseline actual emissions period prior to the 2006/07 FCCU Reliability Project, baseline actual emissions could even be higher than from the period chosen by the applicant – resulting in even less of an emissions “increase.” Specifically, following the netting analysis performed by the applicant, the net change in SO<sub>2</sub> emissions is negative. So the choosing of a period with higher baseline actual emissions would result in a greater negative number.

However, on June 26, 2012, Tesoro submitted a letter to withdraw the request for removal of the 705 tpy SO<sub>x</sub> limit, a copy of which is attached to this response memorandum (see also response to comment #115). The letter states that an increase in the 705 tpy SO<sub>x</sub> limit is not necessary for the Waxy Crude Processing Project. With this new information, the comment no longer applies and UDAQ will reinstate the limit in the final AO document. The condition previously identified as II.B.3.c in the previous AO (DAQE-AN103350056-12) and now located at II.B.4.b will read as follows:

*Emissions of SO<sub>2</sub> from the permitted source shall not exceed 1,637 tons per rolling 12-month period. The SO<sub>x</sub> limit at the FCCU is 705 tons per rolling 12-month period.*

*Compliance shall be determined on a 12-month rolling average. Within 15 days of the beginning of each calendar month, the SO<sub>2</sub> emission totals calculated to demonstrate compliance with the daily (24-hr) limitations shall be totaled for the previous month. The monthly total shall be added to the totals from the previous 11 months to determine the new 12-month rolling total. [R307-401]*

**Comment #14: “The request to relax the loading rate limit means that under 52.21(r)(4), the waxy crude project is a major modification.”**

**UDAQ Response:** This is a similar situation to that expressed in comment #13. The gasoline loading rate limitation was found in Condition II.B.1.f of the AO issued to Tesoro Logistics Operations LLC (DAQE-AN103350055-11, issued on December 7, 2011). As UDAQ treats the entire refinery as a single source for permitting requirements, changes to either of the AOs covering the refinery must be reviewed

together. In this case, the gasoline loading limit would effect VOC emissions which are defined precursor pollutants to ozone. Tesoro is located in a maintenance area for ozone which means, that for an increase in VOC emissions of at least 40 tons per year, the requirements of the PSD program apply. UDAQ has conducted a review of the limitation in question and has found no evidence that this gasoline loading limit was taken for the express purpose of avoiding major NSR. This limit was put in place in the 1990s to demonstrate that no increase in emissions would occur from the installation of two tanks. Rather than conducting a complicated tank-by-tank individual throughput emission approach at that time, Tesoro instead used the total throughput at the loading rack as a surrogate. By limiting the total throughput at the loading rack, the throughput at the individual tanks feeding that loading rack is similarly limited, and therefore the total emissions of VOC from those tanks is also limited.

UDAQ is including the following additional analysis showing that even if the removal of that limit could have impacted the major NSR status of the original project (a point with which UDAQ disagrees), no changes to the ITA or AO would be required (see the following).

If the possibility of major NSR review had resulted, then UDAQ agrees that 40 CFR 52.21(r)(4) would be the applicable regulation. Incorporated by reference into R307-405-19 Source Obligation, that regulation reads as follows:

*At such time that a particular source or modification becomes a major stationary source or major modification solely by virtue of a relaxation in any enforceable limitation which was established after August 7, 1980, on the capacity of the source or modification otherwise to emit a pollutant, such as a restriction on hours of operation, then the requirements or paragraphs (j) through (s) of this section shall apply to the source or modification as though construction had not yet commenced on the source or modification.*

Consistent with the response to comment #13, UDAQ interprets this to mean that should UDAQ relax a limit previously taken to avoid major NSR, then the entire project, including the original action which avoided major NSR, must be re-evaluated as though the entire project were being proposed today. In other words, the original project (or more to the point both the original and the new project) does not automatically become major, but that the entire combination project must be evaluated to determine its major or minor modification status.

Again, this analysis has already been completed. As found in Table 3-3 (page 37) of the revised NOI, gasoline and diesel loadout VOC emissions are shown as increasing by 14.72 tpy. These values are projected actual emissions, as no limitation on plant-wide VOC emissions has been established for the refinery. Including the changes to VOC emissions from other affected components at the refinery, the total increase in projected actual emissions equals 28.12 tpy, which is well below the 40 tpy significance threshold. Therefore the modification remains minor. Accordingly, the comment is noted, and no changes were made to the ITAs.

**Comment #15: “The calculation of product demand growth exclusion is not based on adequate evidence in the record. Tesoro’s calculation of demand growth emissions is not legally defensible. For example, Tesoro based its demand growth emission estimate on “the maximum actual throughput, firing rate or emissions rate” experienced at all units (except loading racks and storage tanks) during a 1 month period. NOI at 27. However, this hypothetical rate must be both legally**

**and physically possible. In other words, the rate must be one that the facility could physically achieve while still complying with its permit and applicable law.”**

**UDAQ Response:** The commenter seems to be making a general statement that just because a source has demonstrated the capacity to operate at a particular rate or throughput it does not mean it can actually operate at that rate or throughput. Specifically, the commenter implies that an analysis must be made of this increased capacity to verify that it would meet all other applicable rules, regulations and requirements. UDAQ agrees that such an analysis is required. However, UDAQ disagrees that this analysis was not completed. Consistent with the requirements of R307-101-2, R307-401-3 and R307-403-3, UDAQ reviewed the validity of the supplied calculation methodology and the accuracy of the resulting projected annual emissions (see NOI Appendix B). In no case did the projected emissions exceed any short- or long-term emission limitations as found in the most recent AO issued to Tesoro (DAQE-AN103350056-12). This was explained in the source plan review (RN103350058-12) for DAQE-IN103350058-12 under Reviewer Comment #8. See also response to comment #25 for more information.

**Comment #16: “Tesoro also uses a 98% utilization factor to calculate its demand growth emission estimate. NOI at 26-27. However, there is no support for this utilization factor in the record. In other words, the record does not support the contention that the facility is physically capable of operating at that rate for any extended period of time, much less a year. Further doubt is cast upon this utilization factor because elsewhere Tesoro uses a 95% utilization or annualized rate that assumes a 95% capacity factor to account for (SRU) unit downtime. NOI at B-30.”**

**UDAQ Response:** UDAQ disagrees with this comment. In EPA’s only policy determination on the use of the demand growth exclusion, found in a letter from EPA Region 4 (found in the NOI as Attachment D, and also attached to this response memorandum), EPA states that it agrees that “Georgia Pacific may use the highest demonstrated average monthly operating level during the baseline period as an approximation of the level of operation that the units ‘could have accommodated’ during the baseline period.”

The EPA letter goes on to state that once a source has determined the projected actual emissions following the proposed project, the source is allowed to exclude from the projection “that portion of the unit’s emissions following the project that an existing unit could have accommodated” during the baseline period and that are unrelated to the particular project.

These statements allow Tesoro to exclude all emissions that were capable of being accommodated during the baseline period – i.e. 100% of all demonstrated emissions not associated with the new project. Tesoro took a more conservative approach and applied a 98% utilization factor on top of already demonstrated maximum monthly emissions (actual emissions) to account for any normal reductions in production that take place.

The comment also addresses the use of a 95% capacity factor at the SRU versus the 98% utilization factor applied for all other equipment. When UDAQ originally analyzed this information, it assumed that the 95% capacity factor was derived from the PM<sub>10</sub> SIP requirement of installing a 95% efficient SRU, and that this 95% factor was then applied to the already adjusted emissions for the SRU (emissions adjusted by the 98% utilization factor discussed above). This assumption was based on the difference between the terms “capacity” and “utilization” that were applied to each factor.

However, this assumption was incorrect. Tesoro has since pointed out that the 95% factor was a typographical error, and this is demonstrated in Attachment B-14 of the NOI. While the first footnote on page B-30 (the second page of Attachment B-14) does reference the 95% capacity factor, this factor does not appear in any of the calculations of that attachment. The 98% utilization factor does appear when calculating the throughput the unit was capable of accommodating (second table on page B-30). Upon receiving this clarification from Tesoro, UDAQ verified the equation of concern and determined that the original calculations were correct and consistent.

**Comment #17: “Although the NOI purports to aggregate the CONO<sub>x</sub> and Overhead Condensing Projects with the Waxy Crude Project, there is no analysis or evidence in the record assessing the emissions from these projects.”**

**UDAQ Response:** UDAQ disagrees with this comment. The emissions from both projects are included in the emission calculations for the Waxy Crude Processing Project. The commenter is perhaps confused that these emissions are not included because they are not listed as a separate line item. This is because the calculation methodology used for determining the emission increase from any project (including one which is aggregated with previously permitted projects) is to calculate the difference between (total) projected future actual emissions and established baseline actual emissions. The baseline period chosen by Tesoro does not include emissions from the CONO<sub>x</sub> and Overhead Condensing Projects because these two projects have not yet been constructed. Projected future actual emissions include all changes to the FCCU (and other equipment) related to the combined Waxy Crude Processing, CONO<sub>x</sub> and Overhead Condensing Projects. As these projects all involve changes at the FCCU, the final FCCU emissions are assumed to include all of the changes associated with all three projects in combination. The commenter appears to assume that these two projects have already been constructed and are in operation, based on the following section of the comment:

*At the same time, it is important to note that, as with projected actual emissions, baseline actual emissions shall include fugitive emissions and emissions associated with startups, shutdowns, and malfunctions. Therefore, if the CONO<sub>x</sub> and Overhead Condensing projects result in any fugitive emissions or emissions associated with startups, shutdowns or malfunctions, those emissions must also be included in the company’s calculation of projected emissions.*

The baseline emissions include startup, shutdown and malfunction emissions which occurred during the baseline period. UDAQ required Tesoro to include startup and shutdown emissions in the calculation of projected actual emissions; however, UDAQ does not include possible but unknown and un-calculable malfunction emissions in the calculation of projected emissions.

**Comment #18: “At the same time, it is important to note that, as with projected actual emissions, baseline actual emissions shall include fugitive emissions and emissions associated with startups, shutdowns, and malfunctions. Therefore if the CONO<sub>x</sub> and Overhead Condensing projects result in any fugitive emissions or emissions associated with startups, shutdowns or malfunctions, those emissions must also be included in the company’s calculation of projected emissions; however, they were not included.”**

**UDAQ Response:** The response to this comment was included in response to comment #17.

**Comment #19: “The PSD netting analysis is invalid.”**

*Again, for the sake of brevity, UDAQ has elected to not include the entire text of this comment as it encompassed several pages of the submitted comment letter, and required numerous referrals to included reference documents. The complete comment can be found beginning with the last paragraph on page 16 of the comment letter and ends with the third complete paragraph on page 19.*

**UDAQ Response:** UDAQ disagrees with this comment. The commenter makes several erroneous claims in its comment. UDAQ will respond to the individual assertions in these subsequent comments (see response to comments #20-25). An additional erroneous assumption is that the netting analysis in this case was performed for PSD purposes. As UDAQ has already explained in response to comment #13, Tesoro’s Salt Lake Refinery is located in a non-attainment area for SO<sub>2</sub>, therefore PSD does not apply and the netting analysis in question was performed for the purpose of non-attainment area major NSR review.

In general, UDAQ also disagrees with the commenter’s assumptions of how a netting analysis is performed. In those cases where a project’s emission increase is greater than the significance amount for a regulated pollutant, the source is allowed to perform a netting analysis to show that the net emissions increase does not exceed significance. The basic procedure for performing a netting analysis is fairly simple and can be found in the definition of net emissions increase at R307-101-2.

Specifically, the *net emissions increase* is defined as the amount by which the sum of the following exceeds zero:

1. any increase in actual emissions from a particular physical change or change in method of operation at a source<sup>1</sup>
2. Any other increases and decreases in actual emissions at the major stationary source that are contemporaneous with the particular change and are otherwise creditable<sup>2</sup>

Tesoro’s Waxy Crude Processing Project only exceeded significance for emissions of SO<sub>2</sub>; therefore Tesoro could perform a netting analysis only for the SO<sub>2</sub> emissions. To perform a proper netting analysis Tesoro would need to include all creditable increases and decreases in SO<sub>2</sub> emissions from projects performed within the past five years. However, since decreases are listed as a separate item in the analysis, the decrease associated with the installation of the tail gas treatment unit at the SRU must be

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<sup>1</sup> This is the calculation of the difference between projected actual emissions and baseline actual emissions for the project itself. However, only the increase from the proposed project is calculated in this first step. Any decreases that result from that project are included in step 2.

<sup>2</sup> The discussion on what constitutes a creditable and contemporaneous change is discussed in subsequent paragraphs (2)(a) through (2)(e)(iv) of the definition (found in R307-101-2). In general, this means that any increases in actual emissions that occurred from past projects that occurred in the last five years must be included. It also includes all creditable decreases resulting from both past projects within the same time period as well as any creditable decreases resulting from the current project. Therefore, that any decreases which occur from changes proposed as part of the primary project are treated as separate contemporaneous projects. See also R307-401-2; Wisconsin Electric Power Co. v. Reilly, 893 F.2d 901, 916 (7th Cir. 1990). Various EPA statements support this approach to the netting analysis. See 56 Fed.Reg. 27633 (1991); 67 Fed.Reg. 80240-80241 (2002); 72 Fed.Reg. 10367-10370 (2007). See also response to comment #21.

listed as a separate item, even though installation of this unit is considered part of the overall Waxy Crude Processing Project (and was included in the NOI for that project).

The analysis can be complicated by inclusion of the demand growth exclusion (discussed separately in response to comment #15), but this exclusion is applied to the individual emission increase that occurs from the proposed project (step 1) rather than to the general netting process itself.

Tesoro's netting analysis is included beginning on page 38 of the revised NOI. The demand growth exclusion is included in the calculation of the project SO<sub>2</sub> emission increase, as calculated in step 1 of the definition of "net emissions increase." Consistent with step 2 of the definition, the table on page 39 lists all contemporaneous projects and the resulting creditable increases and decreases in SO<sub>2</sub> emissions. Because Tesoro correctly followed each step outlined in the definition of "net emissions increase," Tesoro performed an appropriate and correct netting analysis.

**Comment #20: "...the record does not support the analysis because there is no NOI or AO for the Tail Gas Unit installation in the record."**

**UDAQ Response:** The commenter apparently assumes that the tail gas treatment unit is a separate project unrelated to the overall Waxy Crude Processing Project. This is incorrect. The installation of the tail gas treatment unit is included as part of this project, and is specifically required in conditions II.A.12, II.B.3, II.B.3.a and II.B.3.a.1. However, for the sake of clarity, conditions II.B.3.a and II.B.3.a.1 will be renumbered to II.B.3.b and II.B.3.b.1 respectively and a new condition II.B.3.a will be inserted which will read as follows:

*II.B.3.a Tesoro shall install a TGTU (tail gas treatment unit) at the SRU as part of the Waxy Crude Processing Project. Installation of the TGTU shall be complete prior to the resumption of normal operations as outlined in Conditions I.6 and I.8. All gaseous emissions from the SRU shall be treated by the TGTU prior to final treatment at the TGI.*

**Comment #21: "The daily emission limit on SO<sub>2</sub> is not changed in the ITA or in any AO in the record. An emission decrease is creditable only if it is federally enforceable and the emission decrease from the SRU tail gas treatment unit does not meet this standard. While the Waxy Crude ITA does place an annual 60 ton limit on the SRU/TGI/TGTU, the daily SO<sub>2</sub> emission limit on the SRU/TGI/TGTU does not change from the previous permit."**

**UDAQ Response:** The commenter is correct that this permitting action does not change the daily SO<sub>2</sub> emission limit. However, UDAQ disagrees that such a change is required. The daily SO<sub>2</sub> emission limit was established as part of the requirements of the 2005 revision to the PM<sub>10</sub> section of Utah's SIP.

From the definition of "net emissions increase," for a decrease to be included in the netting analysis, it must be both creditable and contemporaneous. See the definition of net emissions increase in R307-101-2, specifically paragraphs (2)(a) through (2)(e). See also response to comment #19.

For a decrease to be contemporaneous it must occur between the date five years before construction on the particular change commences and the date that the increase from the particular change occurs. The decrease from the TGTU is included as part of this project and therefore must occur during this contemporaneous period by definition.

For the decrease to be creditable, it must meet the following criteria [from paragraph (2)(a)]:

- (i) The old level of actual emissions or the old level of allowable emissions, whichever is lower, exceeds the new level of actual emissions;*
- (ii) It is enforceable at and after the time that actual construction on the particular change begins; and*
- (iii) It has approximately the same qualitative significance for public health and welfare as that attributed to the increase from the particular change;*
- (iv) It has not been relied on in issuing any permit under R307-401 nor has it been relied on in demonstrating attainment or reasonable further progress.*

Tesoro calculated the baseline emissions from this unit as 319.39 tpy of SO<sub>2</sub> (see response to comment #22 for more details). Tesoro then proposed an annual enforceable limit of 60 tpy of SO<sub>2</sub> emissions from the TGTU augmented SRU. As 60 tpy is obviously less than 319.39 tpy, this meets criterion #1. As for criterion #2, Tesoro is required to operate an SO<sub>2</sub> CEM to show compliance (see ITA conditions II.B.3.a and II.B.3.a.1 – renumbered in the AO as II.B.3.b and II.B.3.b.1) with both the old daily SO<sub>2</sub> limit as well as the new 60 tons per rolling 12-month period limit. As the CEM requirement covers the demonstration of compliance of the daily emission of SO<sub>2</sub> from the SRU, simple addition yields a rolling 12-month period (a summation of 365 daily emission values) which meets the requirements for enforceability

Criterion #3 doesn't apply since the decrease is for the same pollutant at the same location. Finally, this decrease was only proposed as part of this most recent project and was not previously relied upon for issuing a permit under R307-401, nor was it included as part of any attainment demonstration (satisfying criterion #4). Therefore the decrease is both creditable and contemporaneous, and is properly included in the netting analysis.

**Comment #22: “Tesoro calculates baseline emissions for the SRU as 242.05 tons/year. NOI at B-27. Without explanation or basis in the record, the company then arrives at a baseline emission of 319.39 and explains that the “BAE is defined for a different time period for this separate contemporaneous project.” B-30. However, there is no evidence to establish the baseline emissions for this different time period or even when that time period is. In any case, it is improper to use different time periods for calculating baseline emissions.”**

**UDAQ Response:** The commenter identifies two separate issues here: first, the supposed lack of explanation or basis in the record for different baseline emission rates and second, the use of different time periods for calculating baseline emissions. UDAQ addresses each in turn.

1. Adequacy of the record.

UDAQ disagrees with the claim that the NOI contains no explanation or basis for the baseline emission calculations. Looking at only B-27 through B-30 alone does not provide the full context to understand the basis for the numbers used in the analysis. Rather, the NOI must be reviewed and analyzed as a whole document and not in piecemeal fashion. In this case, one must also refer back to sections 3 and 4 of the NOI for a more complete understanding of the numbers.

Therefore, the record does provide an adequate explanation and basis for the emission rates. Moreover, Reviewer Comment #8 of the source plan review documents the level of review that UDAQ conducted of the NOI.

## 2. Calculation of baseline emissions.

UDAQ also disagrees with the commenter's statement that it is improper to use different time periods for calculating baseline emissions, when in fact the exact opposite is true. The increases or decreases from each project are defined the same way, as the difference between the new level of emissions and the baseline actual emissions for that project. This is found in paragraph (2) of the definition of net emissions increase (R307-101-2):

*(2) any other increases and decreases in **actual** emissions at the source that are contemporaneous with the particular change and are otherwise creditable. (Emphasis added.)*

Determining the change in actual emissions requires the inclusion of the definition of actual emissions. In this case the definition is found in R307-401-2:

*"Actual emissions" (a) means the actual rate of emissions of an air contaminant from an emissions unit, as determined in accordance with paragraphs (b) through (d) below.*

*(b) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the air contaminant during a consecutive 24-month period which precedes the particular date and which is representative of normal source operation. The executive secretary shall allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit's actual operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.*

*(c) The executive secretary may presume that source-specific allowable emissions for the unit are equivalent to the actual emissions of the unit.*

*(d) For any emissions unit that has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date.*

In other words, each project included in the netting analysis calculates the appropriate baseline actual emissions using any consecutive 24-month period which precedes that specific individual project and is representative of normal operation. Therefore each project being included in the netting analysis can and likely will have a different baseline period.

In the case of the decreases associated with the TGTU installation, Tesoro used (and was allowed to choose) the 24-month baseline period from February 2008 through January 2010. This is allowed specifically because during the netting analysis, decreases are treated as though they were separate projects – even if the decrease occurs as part of a combined project, such as the TGTU being proposed as part of the Waxy Crude Processing Project (see response to comment #19).



The commenter appears to apply the language of 40 CFR 51 Appendix S, paragraph II.A.30(ii)(d)<sup>3</sup>. This regulation addresses the requirement for multiple emission units needing to use the same baseline period for all units being changed. However, this language does not apply for two reasons. The primary reason is that in this case, as Utah is a SIP-approved state, Utah's nonattainment area major NSR rules (R307-403, R307-401 and R307-101) govern. Referring once again to the definitions of net emissions increase and actual emissions (as listed above), the multiple emission units language is not found. In addition, the language in question is specifically excluded when determining the baseline period for contemporaneous projects. See 40 CFR 51 Appendix S, paragraph II.A.6(i)(b)] Therefore Tesoro conducted an appropriate netting analysis and no changes are required.

**Comment #23: "... there is insufficient basis in the record for Tesoro's "engineering estimate" for the Tail Gas Unit emissions. NOI at B-29. As a result, this contention must be discarded—leaving Tesoro without adequate justification for its netting analysis."**

**UDAQ Response:** UDAQ disagrees with this comment. Sources frequently propose emission limitations based on engineering estimates – usually where such estimates are based on industry averages, expected results from the installation of control equipment, or historical operational experience. In this case, Tesoro based expected actual emissions from the TGTU augmented SRU from an expected sulfur removal efficiency of greater than 99.9%. This removal efficiency is typical when a TGTU is installed on a Claus SRU such as the one found at Tesoro's Salt Lake Refinery. As Tesoro voluntarily elected to install a TGTU to count as a contemporaneous decrease for purposes of "netting out" of a non-attainment NSR major modification, Tesoro simply chose an emission limit that would be achievable using the newly augmented SRU/TGTU combination. As UDAQ agrees that this limitation is achievable with this technology, this limit was added to the ITA in condition II.B.3.a (renumbered in the AO as II.B.3.b). The fact that it was a simple round number was coincidence. See response to comment #21 for a discussion on creditable decreases.

**Comment #24: "A source also cannot take credit for a decrease that it has had to make in order to bring an emission unit into compliance. Tesoro admits that Rule 307-401-5(d) permits the issuance of an approval order only if it is determined that the pollution control for emissions is at least best available control technology (BACT). Tesoro then acknowledges that the TGTU is BACT for the SRU. NOI at 57. Therefore, the company must install the unit in order to bring the SRU into compliance with BACT to reduce facility SO<sub>2</sub> emissions. Therefore, the TGTU may not be included in a netting analysis."**

**UDAQ Response:** UDAQ disagrees with this comment. The SRU is not being modified as part of the permitting action; hence no BACT analysis is required for the SRU. The discussion in the source plan review was strictly to make the point that if the SRU were being installed as a new unit today, the TGTU would be BACT. But that fact is irrelevant in this case, as rule R307-401-12 allows a source to install equipment or processes that reduce emissions without upfront approval. Tesoro is voluntarily installing a TGTU to reduce emissions of SO<sub>2</sub> and help minimize the impact of the waxy crude project. Reviewer comment #3 of the source plan review expressed UDAQ's analysis of the SRU change (installation of the TGTU) as not triggering a modification.

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<sup>3</sup> Similar language is found in 40 CFR 52.21(b)(48)(ii)(d). As explained in response to comment #13, the non-attainment provisions apply.

However, even if the TGTU would have been required as BACT as part of this project, the installation of the TGTU would still have been a creditable decrease, as the unit is not out of compliance simply as a result of submitting an application (NOI) for a proposed project. The project-related decreases are included as per paragraph (2) of the definition of net emissions increase (R307-101-2). Project netting is used in conjunction with other new source review requirements, which includes the application of BACT. Project netting is not negated by the separate requirement to apply BACT, which the comment seems to imply.

**Comment #25: “In calculating creditable contemporaneous decreases, the source must use the lesser of actual or allowable emissions. However, there is no evidence in the record that Tesoro used the lesser of actual or allowable emissions in conducting its netting analysis.”**

**UDAQ Response:** UDAQ disagrees with this comment. In establishing baseline actual emissions as required by R307-101-2, definition of “net emissions increase,” Tesoro used actual monthly emissions, which in all cases were well below the permitted (allowable) emissions (DAQE-AN103350056-12, Tesoro’s most recent and current AO). The daily SO<sub>2</sub> emission limitation is the governing SO<sub>2</sub> emission limit which establishes a lowest possible monthly “permitted” or “allowable” emission limit of 47.04 tons of SO<sub>2</sub> (calculated as 1.68 tons per day (the permitted daily limit) times the shortest number of days in a month of 28 for a non-leap year February). A review of the actual monthly emissions of SO<sub>2</sub> from page B-27 of the revised NOI shows no month which exceeded even this smallest amount. The largest monthly emission total was 38.82 tons from May of 2009 (which was included in the baseline period). The reason the daily numbers are converted to monthly totals is to meet the definition of “actual emissions” as discussed in response to comment #22. Therefore, Tesoro correctly used the lesser emission numbers for the netting analysis.

**Comment #26: “The record does not support DAQ’s BACT determination.” Commenter suggests that the BACT analysis submitted was “out of date, did not result in an emission limit and includes no finding of technological or economic limits.” This comment also includes various subsections of this central point to which UDAQ responds individually.**

**UDAQ Response:** UDAQ disagrees with this comment. The commenter focuses only on the BACT definition and the requirement that an AO can be issued only after the application of BACT. However, the commenter fails to include the additional definitions that are required to properly address the BACT review issue. As stated in the first sentence of the BACT definition:

*‘Best available control technology’ means an emissions limitation (including a visible emissions standard) based on the maximum degree of reduction for each air contaminant which would be emitted from any proposed stationary source or modification which the executive secretary, on a case-by-case basis, taking into account energy, environmental, and economic impacts and other costs, determines is achievable for such source or modification through application of production processes or available methods, systems, and techniques, including fuel cleaning or treatment or innovative fuel combustion techniques for control of such pollutant.*

The commenter’s analysis omits the definitions of “stationary source” and “modification,” without which BACT cannot be understood or applied.

As defined in R307-101-2:

*"Modification" means any planned change in a source which results in a potential increase of emission.*

R307-401-2 defines "stationary source" as:

*"Stationary source" means any building, structure, facility, or installation which emits or may emit an air contaminant."*

This definition must be further addressed by including the embedded definition of 'building, structure, facility, or installation' also from R307-401-2:

*"Building, structure, facility, or installation" means all of the pollutant-emitting activities which belong to the same industrial grouping, are located on one or more contiguous or adjacent properties, and are under the control of the same person (or persons under common control) except the activities of any vessel. Pollutant-emitting activities shall be considered as part of the same industrial grouping if they belong to the same Major Group (i.e., which have the same two-digit code) as described in the Standard Industrial Classification Manual, 1972, as amended by the 1977 Supplement (U.S. Government Printing Office stock numbers 4101-0066 and 003-005-00176-0, respectively)."*

These additional definitions are important because they must be used in conjunction with the definition of BACT. While there is no definition in the rules for the term 'potential increase of emission' as used in the definition of modification, several reasonable inferences can be made. R307-101-2 defines 'potential to emit,' 'net emissions increase,' and 'emission.'

*"Potential to Emit" means the maximum capacity of a source to emit a pollutant under its physical and operational design. Any physical or operational limitation on the capacity of the source to emit a pollutant including air pollution control equipment and restrictions on hours of operation or on the type or amount of material combusted, stored, or processed shall be treated as part of its design if the limitation or the effect it would have on emissions is enforceable. Secondary emissions do not count in determining the potential to emit of a stationary source.*

*"Net Emissions Increase" – this definition is particularly lengthy and has already been discussed in response to comment# 19.*

*"Emission" means the act of discharge into the atmosphere of an air contaminant or an effluent which contains or may contain an air contaminant; or the effluent so discharged into the atmosphere.*

Taking these definitions together, BACT applies only in those cases where a modification has taken place, meaning only when a planned increase in potential emissions from the entire source occurs. Other definitions for 'modification' exist in various NSPSs or NESHAPs, and these definitions will sometimes address only specific affected units rather than the source taken as a whole. These definitions also routinely address only units which have been physically modified. Therefore, UDAQ reviewed Tesoro's BACT submittal in the same conservative light which Tesoro took; i.e., BACT is required for new emission units and those existing units where both a physical modification and an increase in emissions takes place.

**Comment #27:** “The record includes no independent analysis by the Executive Secretary of either 2011 analysis or 2006 analysis – both merely parrot, verbatim, analyses done by Tesoro. In addition, it was improper to assume that analysis did not need to be updated, and there is no basis in the record to suggest old analysis is adequate. The 2011 analysis is based on an evaluation completed before May 2006 – almost six years old – which, on its face is improper. Furthermore, there is insufficient evidence in the record, such as dates relating to projects and technologies that were reviewed, to determine just how out of date the 2006 analysis is. The BACT review also fails to compare the current emission limits at the Tesoro facility to possible emission limits for various technologies, using same units. Finally, the BACT analysis, for all practical purposes, is based solely on cost considerations which are not transparent to either the public or EPA and thus cannot be considered an adequate BACT decision making process for setting final BACT limits.”

**UDAQ Response:** UDAQ disagrees with this comment. The 2006 and 2011 analyses referenced by the commenter refer specifically to the BACT reviews conducted as part of permitting efforts conducted in 2006 and 2011 respectively.

The 2006 project was the FCCU Reliability project.

The 2011 projects were:

- the Installation of the CONOx and LPG Recovery project (CONOx) and,
- the Installation of the Ultraformer Spray Tower and FCCU Condensing project (Overhead Condensing).

As explained in response to comment #43<sup>4</sup>, UDAQ considers the FCCU Reliability project to be a separate and unrelated project which does not need to be re-reviewed as part of the Waxy Crude Processing Project changes. Therefore, the 2006 BACT determination for the FCCU Reliability project was not re-evaluated.

On the other hand, both the CONOx and Overhead Condensing projects from 2011 have been aggregated with this project and revisiting the BACT analysis for those projects is warranted.

From the 2011 source plan review for the CONOx project (RN-103350047-11):

*Description of Proposal:*

*Changes: The CONOx project will involve the injection of heated oxygen into the FCCU regenerator offgas duct. The oxygen will oxidize the CO in the regenerator offgas at temperatures below the thermal NO<sub>x</sub> threshold. The efficiency of the CO boiler will increase due to the reduction in required fuel gas firing. There will be a corresponding reduction in emissions although Tesoro is uncertain at this time of the magnitude of the reduction.*

*The LPG Recovery project will use the existing vaporizer to vaporize both butanes and propanes to unload LPG rail cars and trucks. Once the rail cars/trucks are unloaded, two new electric compressors will evacuate the remaining liquid heel and vapors. The recovered vapors will then be returned to the refinery via the existing liquid unloading line.*

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<sup>4</sup> For a further discussion of aggregation, please see response to comments #42 through #54.

*Neither project is expected to increase potential emissions above the current SIP emission caps. Small increases in actual emissions may occur because of the addition of new flanges, valves and other pipe connections. In addition, the two electric compressors will require additional power generation from the cogeneration units, which may also result in additional actual emissions. Any increase in actual emissions would be negligible, and those emissions would be included under the previously permitted totals listed in the AO.*

**BACT:**

*The only new equipment being installed with the potential for emissions would be the new pipe connections for both the LPG Recovery project and the oxygen injection system for the CONOx unit. BACT for these connections is inspection, proper maintenance and repair. This is covered under Tesoro's existing LDAR program. Other possible sources of emissions result from incremental increased utilization of existing emission units. As these units are not being physically modified, no new BACT analysis is required. [Last updated February 23, 2011]*

As UDAQ explained at the time of the review, no physical changes took place at any emission units as part of the CONOx project. Therefore no BACT analysis was required. Aggregating the project with the current Waxy Crude Processing project does not change the scope of the CONOx project and hence a new BACT analysis is not required.

The second permitting action was the Overhead Condensing project. From the 2011 source plan review on that project (RN-103350051-11):

*Description of Proposal:*

*The fluidized catalytic cracking unit condensing project consists of vaporizing droplets of condensate to provide evaporative cooling to the inlets of the air coolers, and enhancing fan blades and motor drives to improve air flow and increase heat transfer across the air coolers. This will reduce the load on the wet gas compressor and improve production of lighter products during the warmest months of the year when the wet gas compressor can be a constraint on the system.*

*The ultraformer scrubber replacement project involves removing the existing fixed bed absorber and installing a new spray tower which will reduce corrosion and extend reactor catalyst life and quality. The new spray tower will remove chlorides and moisture from the catalyst regeneration gas resulting in an overall improvement in process efficiency.*

*Neither project is expected to increase potential emissions above the current SIP emission caps. Small increases in actual emissions may occur from certain existing emission units at the refinery. However, any increase in actual emissions would be negligible, and those emissions would be included under the previously permitted totals listed in the AO.*

**BACT:**

*The overhead condensing project may cause a small increase in actual emissions at related equipment at the refinery. Conservatively, BACT was evaluated for these related possible emissions, which would be*

*primarily come [sic] from the FCCU. Continued use of the ESP and SO<sub>x</sub> reducing catalyst are recommended as BACT for this project. The new spray tower does not represent a new source of emissions; rather, it serves as a replacement control device for the existing absorber unit. The new spray tower is more efficient than the absorber unit, and therefore satisfies the BACT requirements of R307-401-8. No other new emission units are being installed and none of other emission units are being physically modified. The NSR section recommends that the existing controls and the new spray tower be accepted as BACT. [Last updated June 22, 2011]*

As stated in response to comment #26, UDAQ took a conservative approach to reviewing BACT for the Overhead Condensing project in 2011. Although it was not being physically modified, UDAQ conducted an analysis on the FCCU at that time and determined that an increase in actual emissions was possible. Therefore, UDAQ reviewed Tesoro's supplied BACT analysis and found it to satisfy the requirements of R307-401-8. UDAQ also determined that the replacement control device was more efficient and therefore also satisfied the requirements of R307-401-8. In addition, it would have qualified as an exemption under R307-401-12 – Reduction in Air Contaminants, which was not stated at that time.

In this case, the commenter is correct that the source plan review for the proposed Waxy Crude Processing project does not adequately explain UDAQ's analysis of BACT for the Overhead Condensing project. UDAQ includes the following discussion to explain the analysis that was conducted.

The Overhead Condensing project addressed two areas of the refinery. The first, the new spray tower, is still exempt from permitting under R307-401-12, as it represents a reduction in emissions. Therefore no new BACT analysis is required for the spray tower. The second are the changes at the FCCU. These changes are being rolled into the changes at the FCCU being addressed by the current Waxy Crude Processing project. The review of BACT applicability for the combined Waxy Crude and Overhead Condensing project is therefore addressed by the current source plan reviews (RN103350058-12 and RN103350059-12).

**Comment #28: “Rather, based on MARAMA’s 2007 table, attached as Exhibit J, the Holly Consent Decree, attached as Exhibit K, and EPA’s Big West Permit, attached as Exhibit L, BACT for NO<sub>x</sub> controls of the FCCU is at least 20 ppm (365 days) and 40 ppm (7 day) (estimated at 16.8 lb/hr and 36.9 tpy).”**

**UDAQ Response:** With the exception of EPA's Big West Permit the documents referenced by the comment are not NSR permitting documents and any limitations established by them were not established for BACT purposes. Specifically, the MARAMA report is a listing of control technology options being reviewed for SIP RACT purposes. The establishment of RACT as part of a SIP process involves adding improved or additional controls at sources in order for an airshed to reach attainment of the NAAQS (see 40 CFR 51.1010). This takes place outside of the NSR process. The Holly Consent Decree is a settlement between Holly and the federal government. Any limitations imposed are the result of negotiations between the parties and not necessarily through the NSR process. The Big West Permit document is a PSD permitting action and where applicable could be consulted in an NSR BACT analysis. However, establishment of BACT is a case-by-case determination performed for each pollutant emitted by the modification in question (see the definition of BACT (R307-401-2(1)) and quoted in response to comment #26 above). Selectively identifying permit limits from a variety of documents and stating that those limits are BACT bypasses the case-by-case review process required by BACT's very definition.

**Comment #29:** “Rather, based on MARAMA’s 2007 table, the Holly Consent Decree, and EPA’s Big West Permit, BACT for the control of SO<sub>2</sub> at the FCCU is at least 20 ppmvd (365-day rolling average) and 50 ppmvd (7-day rolling average), each corrected to 0% oxygen (estimated at 29.3 lb/hr and 51.33 tpy).”

**UDAQ Response:** Please see response to comment #28.

**Comment #30:** “Based on the same sources cited above, BACT to control PM emissions from the FCCU is at least 0.5 pounds PM per 1000 pounds coke burned on a 3-hour average basis.”

**UDAQ Response:** Please see response to comment #28.

**Comment #31:** “The record does not contain any BACT analysis for control of CO at the FCCU. This is a fatal flaw in that analysis. Based on the same sources cited above, BACT for CO is at least 200 ppmvd at 0% O<sub>2</sub> based on 1-hr block average and 100 ppmvd at 0% O<sub>2</sub> based on 365-day rolling average.”

**UDAQ Response:** UDAQ disagrees with this comment. A BACT analysis was not required for CO at the FCCU (see response to comment #26). In addition, the CO emissions from the FCCU are already controlled through use of the CO Boiler. The CO Boiler is subject to a 500 ppmv limit that was established in 40 CFR 60 Subpart J. See also response to comment #28.

**Comment #32:** “Likewise, the record does not include a BACT analysis for control of VOCs from the FCCU.”

**UDAQ Response:** This is correct. As explained in response to comment #26, no BACT review is required for the FCCU. No increase in VOC actual or potential emissions at the FCCU is expected from this project (see Table 3-3 on page 37 of the NOI). As explained in response to comment #15, UDAQ reviewed the validity of the calculation methodology and the accuracy of the resulting emissions estimates. Accordingly, no changes were made to the ITAs.

**Comment #33:** “Similarly, the record lacks a BACT analysis for instances where emission limits for the FCCU that do not apply during SSM, BACT should be established for SSM. The BACT that applies in such cases is outlined in EPA’s Big West Permit.”

**UDAQ Response:** While unclear, it appears that the commenter assumes that the emissions limits do not apply during periods of start-up, shutdown and malfunction (SSM). The ITA contains no exemption for instances of SSM in any of the limits for the FCCU. The emission limitations apply at all times (see conditions II.B.4.b and II.B.4.c and II.B.4.c.1 of the ITA). Because there are no exemptions for SSM periods, no BACT analysis which specifically addresses those periods is required.

**Comment #34:** “The record also lacks a BACT analysis for the SRU and instead, merely states that BACT for this unit is 60 lbs [sic]/year. As there is no basis for this statement, it is not defensible. In any case, adequate BACT for the SRU should be expressed in a shorter term emission limit. There is nothing to indicate that an annual emission limit can be BACT.”

**UDAQ Response:** UDAQ disagrees with this comment. A BACT analysis was not required as discussed in response to comment #23.

**Comment #35:** “Because the record also does not include BACT analysis for other emission units, the permitting decision is invalid. Tesoro explains BACT requirement as “required for new emission units and existing emission units where there is a physical modification and an increase in emissions.” NOI at 57. At the same time, the company states: “Installation of the new emission units (replaced Black Wax crude Tank 188, new Yellow Tank 186, the new DDU reactor, new VRU vessels, and the NESHAP control system) at the refinery will result in an increase in potential emissions.” NOI at 61. Therefore, there should be BACT analysis for these emission units. Saying that the emission increases are “negligible” is irrelevant. In any case, Tesoro’s interpretation of the Utah rule is wrong. BACT analysis is required regardless of whether there is a modification of unit and regardless of whether that unit will experience emission increases. See R307-410-8(1)(a); R307-401-5(2)(d).”

**UDAQ Response:** UDAQ disagrees with this comment. First, UDAQ assumes that the citation the commenter intended is R307-401-8(1)(a). R307-401-5(2)(d), to which the commenter refers, states that the NOI must include an analysis of BACT for the proposed source or modification. R307-401-8(1)(a) requires that the AO only be issued if the degree of pollution control for emissions is at least BACT. Response to comment #26 addresses when BACT must be applied. The UDAQ conducted a BACT review specifically for the tanks (see source plan review RN103350058-12 at page 6). For the DDU reactor and the VRU, there are no emissions except during SSM events. The measurement of emissions during SSM events is infeasible due to safety concerns. The definition of BACT (R307-401-2(1)(d)) allows for the use of a work practice standard when the measurement of emissions is infeasible. The use of a flare represents best industry work practice standards for upset conditions and therefore is BACT for the DDU and VRU (for example, see 40 CFR 60 Subpart Ja). In addition, the commenter has not identified what it considers to be the proper alternative. UDAQ did not include these units in its source plan review discussion because the units are already controlled by flares (see NOI Section 2.2.2 and 2.2.5).

The UDAQ is unsure what the commenter intends as it relates to the NESHAP control system. The NESHAP control system is a wastewater control system required by 40 CFR 61 subpart FF. This required process removes emissions of benzene and other VOCs. This control process or system meets BACT for control of VOCs in the wastewater. This system is already in place and nothing in this permitting action changes that requirement.

**Comment #36:** “The BACT analysis is further inadequate because it does not include an analysis for the flares. Although Tesoro describes the BACT requirement as “required for new emission units and existing emission units where there is a physical modification and an increase in emissions,” NOI at 57, this is wrong.”

**UDAQ Response:** UDAQ disagrees with this comment. Commenter claims that the flares require a BACT analysis but offers no explanation to support that conclusion. A bare conclusion that the agency has erred in its analysis does not indicate to the agency what the preferable course of action should have been, and thus fails to serve the purpose of public comment.



In this case, the flares are not being physically modified, nor are they experiencing a change in their method of operation. The flares continue to control the same process streams; they are not limited by any permit term or emission limitation; and they are not an affected unit as defined under any of the applicable NSPSs or NESHAPs related to this permitting action. Therefore, no BACT analysis is necessary for the flares.

**Comment #37: “The ITA does not comply with the federally enforceable PM<sub>10</sub> SIP.”**

**UDAQ Response:** The full text of the comment cites various limitations contained in the PM<sub>10</sub> State Implementation Plan (SIP) approved by EPA in 1994 (1994 SIP). The commenter then compares those limitations to the limitations proposed by the ITA, claiming that the EPA limits as contained in Appendix A of the 1994 SIP (as found on EPA’s website) are more stringent than the limits in the ITA. Therefore, so the argument goes, the proposed limits conflict with the 1994 SIP and are unlawful.

UDAQ has identified several problems with this comment. First, none of the 1994 SIP limits identified by the commenter are being changed as a result of the current ITA. Previous permitting actions have dealt with the 1994 SIP limits to which the comment refers, including numerous permitting actions between the 1994 SIP and the present. Accordingly, the limitations identified as discrepancies are not discrepancies at all, and are irrelevant to the current ITA.

Second, the ITA limits are consistent with those contained in a 2001 consent decree between EPA and Tesoro. That consent decree was subject to public comment and approved by a federal judge. DAQ issued an Approval Order in 2002 that incorporated the terms of the consent decree. The limits in that 2002 AO were the basis for the 2005 SIP rulemaking. In any event, the time to take issue with any of these SIP actions has long since passed, and such actions cannot be collaterally attacked by submitting public comment on the ITA.

Third, the ITA limits are consistent with the 2005 SIP rulemaking, which was also subject to notice and comment rulemaking. On July 6, 2005, the Utah Air Quality Board adopted revisions to the PM<sub>10</sub> SIP. UDAQ recognizes this SIP as current state law. The draft permits (ITAs: DAQE-IN103350058-12 and DAQE-IN103350059-12) both comply with all terms and provisions of the 2005 SIP revision.

Fourth, as the comment itself states, the 1994 SIP was approved by EPA and is therefore federally enforceable. However, the commenter fails to acknowledge that the 1994 SIP expressly allows for changes to limitations contained therein, pursuant to the following provision: “Specific limitations for installations within a source listed in the SIP which are not specified will be set by order of the Board. Specific limitations for installations within a source may be adjusted by order of the Board provided that the adjustment does not adversely affect achieving the applicable NAAQs.” This provision is currently identified by EPA Region 8 as part of Utah’s SIP at:

<https://yosemite.epa.gov/R8/R8Sips.nsf/b2af5baa99cc429287256b5f0054df73/a4e1fd7c6240171c872571ea0067bf94?OpenDocument> (reference Utah Admin. Code R307-305-2 as codified therein).

Approval Orders are orders of the Board. Accordingly, provided that the AO meets the provisions of the 1994 SIP and other applicable requirements, the federally enforceable SIP upon which the commenter relies authorizes the exact action proposed by the ITA. Likewise, several of the actions referenced above have also been taken consistent with this provision.

**Comment #38:** “The significant emission rate for H<sub>2</sub>SO<sub>4</sub> is 7 pounds per year. NOI at 23. Based on calculations prone to subjective analysis, Tesoro calculated that emission increase for its Waxy Crude Project for H<sub>2</sub>SO<sub>4</sub> would be 6.87 tons per year. NOI at 37. Given that the estimate is so close to the significant emission rate, the Waxy Crude Project should be considered a major modification for that pollutant. At the very least, the Executive Secretary is obligated to take a hard [sic] at the calculations and assumptions which lead to Tesoro’s estimate for the project emission increases. Moreover, as said elsewhere, there is insufficient evidence in the record to support the Executive Secretary’s review of those calculations, as the record is devoid of independent analysis of these emission calculations. In addition, as a general matter, Tesoro has failed to provide an adequate basis for its emission calculations.”

**UDAQ Response:** UDAQ disagrees with this comment. Pursuant to R307-101-2, an increase in actual emissions that falls below the significance level is not a major modification. The significance level is defined in rule and therefore the commenter’s assertion that the increase “is so close to the significant emission rate” that it should be considered a major modification is without merit. UDAQ did review the supplied emission information for H<sub>2</sub>SO<sub>4</sub>, which is summarized on page 37 of the NOI and further detailed on page B-8, B-9 and B-33 of the NOI. UDAQ agreed with the methodology used by Tesoro, which is in keeping both with current practice and all terms and conditions of their current permits. With respect to UDAQ’s review of the calculations, see response to comment #15.

**Comment #39:** “The NESHAP compliance is inadequate.”

**UDAQ Response:** This comment refers to the benzene NESHAP (40 C.F.R. § 61, subpart FF). UDAQ disagrees with this comment. The requirements of 40 CFR 61 Subpart FF: National Emission Standard for Benzene Waste Operations (benzene NESHAP) were incorporated by reference into the ITA under Section III: Applicable Federal Requirements. Tesoro is required to comply with all applicable terms and limitations of the benzene NESHAP. Under the provisions of that NESHAP, once a source reaches a certain discharge level additional controls are required – although the source has options as to the type of control selected. For purposes of this project, Tesoro included these additional controls in Attachment B-34 (found on pages B-70 and B-71) to the revised NOI. As stated in reviewer comment #5 of the source plan review (N103350058-12), Tesoro is required to comply with the benzene NESHAP and should the next trigger discharge level be reached, will comply with the 6BQ option allowed under the NESHAP.

However, on August 30, 2012, Tesoro submitted a letter with additional information regarding the NESHAP control system. Although Tesoro included the emission calculations from the control system in its NOI, the system would only be installed if Tesoro’s wastewater benzene emissions would exceed 10 Mg per year. Tesoro has re-evaluated the Waxy Crude Processing Project and determined that the installation of the control system will not be required.

The removal of the benzene control system from the project scope requires some changes to the conditions outlined in DAQE-IN103350058-12. Specifically, condition I.5 references the recordkeeping requirements for various components of the project. Two line items specific to the benzene control system will be removed. Similarly, current condition II.B.1.g will also be removed as it addresses only the reporting requirements needed when installing the control system.

**Comment #40:** “There is no basis in the record for the increase in unloading trucks at the site. Because the record does not support the calculation of additional trucks unloading at the facility, the emission calculations based on such estimates are invalid.”

**UDAQ Response:** UDAQ disagrees with this comment. The commenter claims that certain estimates are invalid without any supporting documentation or justification. Only the emissions associated with the loading and unloading operations are included as part of the stationary source. These emission estimates are included in Attachments B-27 through B-31 of the revised NOI. With respect to UDAQ’s review of the calculations, see response to comment #15. For emissions from loading and unloading of the trucks, the controlling factor in the equation is the amount of liquids unloaded from or to the trucks, not the number of individual truck trips (see AP-42, section 5.2 and 40 CFR 98.253(n)). Tailpipe emissions from transport trucks are not regulated under Title I of the Clean Air Act, but are instead subject to Title II (see response to comment #7).

**Comment #41:** “The NSPS analysis is invalid.”

*For the sake of brevity, UDAQ has elected to not include the entire text of this comment as it encompassed several pages of the submitted comment letter. The complete comment begins on Page 25 of the comment letter under the above heading and ends with the second complete paragraph on Page 27 of the letter.*

**UDAQ Response:** UDAQ disagrees with this comment. The comment is both a discussion on the applicability of 40 C.F.R. § 60, subpart Ja as well as a discussion on the definition of modification from Subpart A. The comment is based on selective citations of the Code of Federal Regulations which fail to give the full context for applicability determinations; the requirements must be read as a whole. For example, a modification as defined in subpart A does not apply to another given subpart or standard, unless the specific applicability outlined in that standard also applies to the unit being analyzed. UDAQ has stated its analysis of the applicability of Subpart Ja in reviewer comment #3 in the source plan review (N103350058-12). That analysis included a reference to 40 CFR 60.14(e) – the provisions of which must be used when determining whether a proposal constitutes a modification.

The commenter states that the proposed improvements to the FCCU go well beyond just the risers. As found on page 11 of the revised NOI, the physical changes at the FCCU involve the following:

- Install a new riser with increased residence time
- Install a new rough cut cyclone
- Install new secondary cyclones, a new plenum and a new, larger overhead line
- Modify the Main Fractionator internals
- Relocate the sponge oil return line

The FCCU riser is located just before the FCCU reactor, but includes the feed cyclones (mentioned above) to the reactor. The cyclones, the plenum and the overhead line are all internal components of the FCCU riser. The distillation column is not listed in the definition of FCCU as found in subpart Ja (40 CFR 60.101a):

*Fluid catalytic cracking unit means a refinery process unit in which petroleum derivatives are continuously charged and hydrocarbon molecules in the presence of a catalyst suspended in a fluidized*

*bed are fractured into smaller molecules, or react with a contact material suspended in a fluidized bed to improve feedstock quality for additional processing and the catalyst or contact material is continuously regenerated by burning off coke and other deposits. The unit includes the riser, reactor, regenerator, air blowers, spent catalyst or contact material stripper, catalyst or contact material recovery equipment, and regenerator equipment for controlling air pollutant emissions and for heat recovery. When fluid catalyst cracking unit regenerator exhaust from two separate fluid catalytic cracking units share a common exhaust treatment (e.g., CO boiler or wet scrubber), the fluid catalytic cracking unit is a single affected facility.*

The fractionator is a part of the FCCU distillation column which is located downstream of the FCCU reactor and therefore is not included as part of the affected unit (FCCU) of subpart Ja. Similarly the sponge oil return line is located downstream of the distillation column and is also not included in the above definition.

The commenter goes on to claim that “it is impossible to assess whether these modifications actually do lead, in part or in whole, to an increase in hourly emissions.” Hourly emissions from the FCCU are based on the maximum feed rate and coke burn rate (AP-42 table 1.4-2, and AP-42 section 1.4), neither of which is increasing as part of this project. The FCCU upgrades are specifically aimed at improving annual yields and production, not on increasing hourly production. Therefore the increase in annual actual emissions must be evaluated for NSR modification purposes. Subpart Ja applicability is based on the unchanging hourly emission potentials.

The commenter further states: “...the NOI states that changes to the FCCU will directly lead to improved product yields and increased production, conditions which impact hourly emissions. Tesoro also admits that the modification to the FCCU riser is critical to increasing FCCU conversion, which is the basis for increased production. Also as the NOI demonstrates, Tesoro equates modifications to the FCCU riser with the ability of the VRU to increased production. Again, such changes could and do result in emission increases. In any case, the NOI indicates that the changes to the FCCU riser are inseparable from the modifications to the VRU and therefore emission increases that result from these two components of the Waxy Crude Project must be attributed to the modifications to the FCCU.”

This is incorrect. The purpose of defining affected units in each NSPS is to prevent exactly this sort of snowball effect. A source that makes a change at its plant is not forced into an NSPS modification unless that change specifically affects one or more of the NSPS-affected units. Components that are not specifically listed do not automatically impact listed components merely because they are related.

The commenter continues: “Tesoro also fails to consider that an increase in hourly emissions could result from conditions other than an increase in the design feed rate to the FCCU. See NOI at 49.”

UDAQ disagrees here as well. On page 50 of the revised NOI, Tesoro specifically states that it has evaluated both a scenario where a decrease in coke burn rate occurs as well as the effect of sulfur and nitrogen compounds in the coke and FCCU overhead gas on emissions. Based on the above discussion, subpart Ja does not apply in this case (see reviewer comment #3 of the source plan review).

The last point of the comment is: “Finally, under NSPS, an enforceable limit to restrict actual emissions cannot be taken to avoid NSPS applicability. Tesoro fails to address how this requirement impacts its purported analysis.”

Since UDAQ does not propose an enforceable limit in this action to avoid NSPS applicability, UDAQ does not understand the intended context for this statement. Consequently, no changes were made to the ITA.

**Comment #42:** “In light of the facility-wide modifications undertaken by Tesoro over the past five years in order to expand its capacity to refine waxy crude oil; the combination of “minor” projects that have facilitated this expansion; the health consequences of increasing a major source of air pollution at the same time that the Wasatch Front is in nonattainment for SO<sub>2</sub> and PM<sub>2.5</sub>; and the additional economic burden that other companies will be forced to bear in order to accommodate for Tesoro’s increased emissions, we urge you to reconsider approving Tesoro’s Waxy Crude Project as proposed and instead strictly enforce the statutory and regulatory requirements that should apply to this project as described below.”

**UDAQ Response:** This is a general statement suggesting that all past projects should be aggregated. The commenter makes individual claims about aggregation in subsequent comments, and UDAQ will respond to each comment individually. However, UDAQ disagrees with this general aggregation comment. Each project must be evaluated individually to determine its relationship to other projects and any need for aggregation.

**NOTE TO READER:** Many of the subsequent comments (comments #43 through #54) are variants of this same theme – the projects should have been combined into one project for analysis. UDAQ has responded to each, but all the comments on this subject are interrelated, and the responses should be read together for appropriate context.

**Comment #43:** “Because this project is substantially related to Tesoro’s 2007 FCCU Reliability Project, the emissions increases from this project should be aggregated with the 2007 FCCU Reliability Project for the purposes of determining whether this is a major modification that triggers New Source Review.”

**UDAQ Response:** UDAQ disagrees with this comment. UDAQ did review the 2007 FCCU Reliability Project and determined it was a separate project. From the current source plan review (N103350058-12):

*FCCU Reliability Project - in contrast, the 2007 FCCU reliability project's purpose was to improve the reliability of the FCCU (FCCU) and not to increase feed capacity nor the production of gasoline or diesel. Based on the differing objectives of these two projects, and the fact that they will be separated by six (6) years, UDAQ finds that these two projects are separate and will not be aggregated as a single permitting action. See Section 2.5 and Attachment C of the revised NOI submitted by Tesoro on December 21, 2011 for more supporting information.*

This is supported by the information contained in the source plan review for the FCCU project itself:

*The intent of the FCCU reliability project is to improve the reliability of the FCCU by fixing circulation problems through a more reliable, modern and efficient design. The scope of the project involves replacing the existing cyclones with new cyclones designed to current specifications and Industry Best Practices. It also includes upgrading the design of the catalyst circulation equipment.*

*The detailed components of the project include the following:*

- 1. Redesigning the cyclones for higher velocities, which result in increased efficiencies.*
- 2. Modifying the regenerator shell to add height for new cyclones and change the head design to a hemispherical shape.*
- 3. Revising the spent catalyst inlet and increasing the number of discharge arms. These changes will result in better distribution of the catalyst, which in turn will result in more complete combustion. This minimizes afterburning and the associated NO<sub>x</sub> emissions.*
- 4. Replacing the air pipe grids with equipment designed to current specifications and Industry Best Practices. This will produce more uniform catalyst regeneration.*
- 5. Upgrading the standpipe to reduce pressure drop and minimize upsets and flow disturbances.*
- 6. Adding a new slide valve and “Y” section to ensure uniform catalyst flow to the fresh feed nozzles.*
- 7. Replacing the existing reactor feed nozzles with more modern nozzles consistent with Industry Best Practices.*
- 8. Replacing the stripper internals which will improve unit conversion by reducing hydrocarbon carry-under to regenerator.*
- 9. Add ammonia injection system downstream of the CO boiler and upstream of the ESP to further control FCCU PM<sub>10</sub> and opacity. Ammonia injection conditions the fines and improves overall ESP opacity control.*

*The intent of the project is to improve the reliability of the FCCU, not to increase feed capacity nor the production of gasoline and/or diesel. The unit is at risk of regenerator cyclone failure as the cyclones and hanger system are 33 years old and have reached the end of their useful life. The air grid was severely damaged during a 2002 fire. The proposed revamp will remedy these situations. It will also reduce the regenerator temperature and pressure, increasing feed flexibility by allowing the use of heavier feed stocks.*

The projects are separated in time by six (6) years, which falls outside the normal range of consideration for aggregation (see the EPA 3-M memo as well as responses to comments #50 through #54 below). The projects are not related, as explained above. The commenter seems to equate “heavier feed stocks” with “waxy crude,” even though this is not necessarily correct. The term “heavier feed stocks” refers only to the density or specific gravity of the crude and is characterized by a higher viscosity (lessened ability to flow). Waxy crudes are defined as being more paraffinic (containing wax or wax-like compounds) and are characterized more by the concentration of contaminants and their ability to leave deposits on piping and reactor vessel walls. The methods for refining these different types of crude are different. Heavy crudes typically require only additional cracking residence time, while waxy or paraffinic crudes need to have the contaminants removed as part of the overall refining process. So, while the 2007 FCCU Reliability Project and the current Waxy Crude Processing Project may seem similar, they serve different purposes and are considered separate projects.

**Comment #44: “In this case, it appears that Tesoro has circumvented the requirements of NSR by embarking on modification projects that are carefully sized to avoid the major modification trigger, but which nonetheless, in the aggregate have produced a major modification at the refinery all the while avoiding the requirements of NSR. The NOIs for Tesoro’s Waxy Crude Project and the FCCU Reliability Project demonstrate that the two projects are sufficiently related to be considered**

**one overall project that will increase Tesoro's capacity to refine heavier feedstock, like waxy crude. Therefore the emissions increases should be aggregated for the purposes of the NSR analysis."**

**UDAQ Response:** UDAQ disagrees with this comment. As explained in response to comment #43, UDAQ considers the 2007 FCCU Reliability Project as separate and unrelated to the current project. UDAQ agrees that a specific review of projects falling close in time should be conducted to determine the applicability of Major NSR. As specifically quoted by the commenter, EPA also has this concern and has expressed the need for specific review on several occasions. The commenter's concern appears to arise from the 2007 FCCU Reliability Project's setting of specific limits at the FCCU based on the (then) unknown effect on emissions resulting from the project. These limits were set based on the following, as found in the source plan review for that project:

*The only expected emission increase that will occur as a result of the revamp project is SO<sub>x</sub>, due to the regenerator cyclone upgrade which increases the overall coke burn rate. However, the DeSO<sub>x</sub> catalyst will maintain incremental SO<sub>x</sub> emissions below the levels considered significant.*

*The impacts of the changes on other pollutants are expected to be small but are more difficult to predict. Tesoro is therefore proposing to define baseline actual emissions and accept a pollutant-specific emission cap for the FCCU that is equivalent to the baseline actual emissions plus the following:*

<i>Pollutant</i>	<i>Proposed Emissions Increase (tons/year)</i>
<i>PM<sub>10</sub></i>	<i>14</i>
<i>SO<sub>2</sub></i>	<i>39</i>
<i>NO<sub>x</sub></i>	<i>39</i>

These limits are found in conditions #11 (the SO<sub>x</sub> limit at the FCCU is 705 tons per year and is effective upon completion of the FCCU upgrade scheduled to be completed in the first half of 2007), #17 (the NO<sub>x</sub> limit at the FCCU is 174 tons per year ...) and #19 (the PM<sub>10</sub> limit at the FCCU is 69 tons per year ...) of the current AO (DAQE-AN103350056-12). The commenter's concern is that with the increase from the 2007 project being just below significant, any increase resulting from the current project should automatically trigger significance and therefore a major modification. However, with the exception of the SO<sub>x</sub> limit, these limits remain in place in the current ITA (see DAQE-IN103350058-12; Conditions: II.B.5.b and II.B.6.a). As addressed in response to comment #13, the SO<sub>x</sub> limit will be reinstated. The increase in emissions from this project alone, or from both projects combined remains below significant since the maximum increase in emissions is still limited by these conditions. Even if the SO<sub>x</sub> limit at the FCCU had been removed, the netting analysis for SO<sub>2</sub> emissions conservatively included the increase from the 2007 project, and the resulting net emissions change was still negative (and therefore less than significant by definition). Accordingly, no circumvention of major NSR has taken place.

**Comment #45: "FCCU Reliability and Waxy Crude Project both serve the same purpose - to increase Tesoro's capacity to process heavier feedstock and capitalize on the expanded market provided by the UNEV Pipeline, initiated in 2006 and scheduled to be completed in 2012."**

**UDAQ Response:** Tesoro has acknowledged that the construction of the UNEV Pipeline has expanded Tesoro's marketing options, which was listed as one reason for the current Waxy Crude Processing Project (see page 19 of the revised NOI). The other justification Tesoro offered for the project was the

cost advantage of black and yellow waxy crudes which changed beginning in 2010. See also response to comment #51 regarding the economic justification for the project.

At the time of the announcement of the UNEV Pipeline, Tesoro had already submitted the NOI (application) for the FCCU Reliability Project. While Holly proposed its interest in and exploration into construction of the pipeline on April 19, 2006<sup>5</sup>, the actual date of agreement for construction of the pipeline was not until July 9, 2007<sup>6</sup>. By contrast, the NOI for the Tesoro FCCU Reliability Project was submitted on May 10, 2006; although Tesoro requested UDAQ concurrence on the proposed permitting strategy for the FCCU Reliability Project as early as April 10, 2006. That NOI included significant engineering calculations; enough such that UDAQ does not believe that Tesoro initiated a rush project to construct only the first part of a FCCU expansion based on a then-hypothetical pipeline, and then waited several years to submit the second part of the expansion – specifically so as to avoid the major NSR provisions. This commenter-theorized situation seems highly implausible, especially given the large capital investments associated with any change to refinery process units – especially one as integral as the FCCU. In any event, as outlined in other responses (specifically see response to comment #43, and #50 through #54), the projects addressed in the comment do not warrant aggregation. Accordingly, no changes were made.

**Comment #46: “These two projects serve the same processing purpose and both appear to be undertaken as part of the same overall project—to capitalize on the construction of a pipeline from Salt Lake City, UT to Las Vegas, NV (the “UNEV pipeline”).”**

**UDAQ Response:** Please see response to comment #45.

**Comment #47: “Additionally, it appears that the expansion that Tesoro seeks to undertake with the Waxy Crude Processing Project would not be possible but for the improvements made during the FCCU Reliability Project.”**

**UDAQ Response:** This comment is found in the footnote on page 31 of the comment letter, and ties in with comment # 45. Tesoro addressed this concern specifically in its analysis on pages 18 (initial screening analysis) and 20 (detailed discussion between the two projects) of the NOI. UDAQ reviewed this information alongside the source plan review it completed for the FCCU Reliability Project (RN0335028-06) and agreed with Tesoro’s conclusion. A summary of this review was included in the most recent source plan review (RN103350058-12) as reviewer comment #9. See also response to comments #15 and #43.

**Comment #48: “Tesoro’s arguments that the two projects are not related are unpersuasive because they ignore the fact that one purpose of the FCCU Reliability Project was to increase Tesoro’s flexibility to process heavier feedstock.”**

**UDAQ Response:** Please see response to comment #43 for details on the differences between heavy and waxy crudes.

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<sup>5</sup> <http://archive.slttrib.com/article.php?id=3733248&itype=NGPSID>

<sup>6</sup> <http://archive.slttrib.com/article.php?id=6332650&itype=NGPSID>



**Comment #49: “In the alternative, DAQ needs more information before accepting Tesoro’s assertion that these two projects are not sufficiently related to require aggregation. The 3M Memo lists specific criteria that regulators should analyze and consider when evaluating whether nominally separate projects should be considered a single project for NSR.”**

**UDAQ Response:** UDAQ disagrees that additional information is required. The 3M memo is a memorandum from the EPA’s Office of Air Quality Planning and Standards to EPA Region V regarding a permitting action being undertaken by Minnesota Mining and Manufacturing (3M) Center. In the memo, EPA outlines an analysis that can be undertaken if circumvention of permitting rules is suspected. EPA identifies five criteria:

1. Filing of one or more of minor source or minor modification applications associated with emissions increases at a single plant within a short time period.
2. Application of funding.
3. Reports of consumer demand and projected production levels.
4. Statements of authorized representatives of the source regarding plans for operation.
5. EPA’s own analysis of the economic realities of the projects considered together.

UDAQ always considers the possibility that projects, particularly when in close proximity time-wise, should be aggregated. As explained in response to comment #43, UDAQ reviewed the two projects and made a side-by-side comparison of the project descriptions and determined that they were unrelated and did not warrant aggregation. Moreover, they were separated by six years, which was further evidence that the projects were separate. Hence, UDAQ did not feel compelled to use the additional criteria of the 3M memo, nor was there a requirement to do so. These specific criteria addressed by EPA’s Applicability of New Source Review Circumvention Guidance to 3M – Maplewood, Minnesota (3M Memo) are addressed in responses to comments #50 through #54.

**Comment #50: “Tesoro has filed multiple minor modification applications associated with the same process resulting in emissions increase [sic] at a single plant within a short time period.”**

**UDAQ Response:** This is correct, although as previously stated in response to comment #42, each project must be evaluated individually at the time of its submission to determine its relationship with other contemporaneous projects and whether aggregation is warranted. As the commenter notes, Tesoro has filed four NOIs since 2006. EPA’s memo concluded that 3M applied for multiple permit changes within a short time period, and EPA recommended a more in-depth review with respect to the inter-relationship between successive small projects. As used by EPA in its memo, eighteen months is more representative of a “short time period”, than the nearly six years that have elapsed since the FCCU Reliability Project was proposed.

Nevertheless, UDAQ did review the projects for a possible inter-relationship and based on the information provided, UDAQ agreed with Tesoro’s assertion that both the CONOx and Overhead Condensing projects needed to be aggregated (see response to comment #27), but that the FCCU Reliability Project was separate from the current project and should not be aggregated (see response to comment #43).

**Comment #51: “DAQ has not analyzed whether Tesoro treated the FCCU Reliability Project and the Waxy Crude Project as one modification for financial purposes.”**

**UDAQ Response:** This is correct; however, UDAQ disagrees that this information is required in this case. Tesoro has not provided specific financial information such as loan applications; however, as stated in the revised NOI (page 19), the commercial viability of black and yellow wax crudes improved dramatically beginning in 2010. Such information would not have been available in 2006 when the FCCU Reliability Project was proposed. Regarding the application of the 3M memo, please see response to comment #49.

**Comment #52: “DAQ has not analyzed reports of consumer demand and projected production levels.”**

**UDAQ Response:** The comment seems to imply that UDAQ must obtain stockholder reports and similar business reports in evaluating the interconnectedness of two projects. UDAQ would only use such information as potential proof of interconnectedness, as is implied by the 3M Memo. Regardless, UDAQ has analyzed projected production levels as stated in reviewer comment #9 of the source plan review. UDAQ determined that the two projects are separate and should not be aggregated as a single permitting action. Please see responses to comments #43 and #49 through #54.

**Comment #53: “DAQ has not critically reviewed statements of authorized representatives or Tesoro’s plans for operation. Statements by authorized representatives of the source’s plans for operation can be probative information as to whether the minor modification applications are, indeed, attempts to circumvent NSR. Tesoro’s 2006 NOI indicates that Tesoro anticipated that the FCCU Reliability Project would allow it to process heavier crude and relayed Tesoro’s expectation that it might transition to processing more heavier [sic] feedstock as a result of the upgrade. See, e.g., FCCU Reliability NOI at 5 (describing anticipated impacts to miscellaneous refinery equipment “if the refinery continues to process existing crude slates” and (alternatively) if “heavier crude slates are processed”). Nevertheless, the ITA does not evaluate these statements critically to determine whether the two projects should be considered a single overall project in the NSR analysis. Without DAQ’s independent critical analysis of these statements and others by Tesoro’s authorized representatives about Tesoro’s plans for operation, the conclusion that the two projects need not be aggregated is incomplete.”**

**UDAQ Response:** This comment repeats prior comments and does not express a separate point of contention. The overarching comment (expressed as comment #45 and restated in whole or part as comments #46 through #54) relies on two arguments: one, that the projects are related simply because both projects happen to allow Tesoro “to process heavier crudes,” and two, that the UNEV pipeline was coincidentally announced at approximately the same time and that Tesoro must therefore be pursuing a “construction in stages” approach to circumvent major NSR permitting. Therefore, so the argument goes, all these projects, by nature of timing, must not only be related but must all be major modifications by default. As stated in UDAQ’s other responses (see response to comments #45 through #54), UDAQ disagrees with this comment.

**Comment #54: “DAQ did not analyze whether the economic realities of the projects considered together indicate that a reasonable company management team would coordinate the planning and execution of the two projects. ... The ITA does not consider the two projects’ “intrinsic relationship with each other,” like whether the Waxy Crude Project would be possible if the FCCU Reliability Project had not already been completed. Nor does the ITA consider whether the FCCU would have**

**been economically viable on its own, without anticipating the expanded production capacity facilitated by the Waxy Crude Project.”**

**UDAQ Response:** The 3M Memo addresses the internal coordination of separate projects and the impact on the plant’s economic viability. Specifically, the memo suggests an analysis of such concepts as the scheduling of concurrent or overlapping plant down times or turnover periods in minimizing the combined impact of the construction of two or more projects within a particular production schedule. In this case, the FCCU Reliability Project has already been completed, while the current project has not yet begun construction. Consequently, the two projects are not related. The comment assumes that the two projects must be related but ignores the stated purpose of the FCCU project (see RN0335028-06) and the analysis included in the source plan review for this project (see RN103350058-12).

**Comment #55: “DAQ used the wrong emission standard for evaluating whether this project is a ‘major modification.’”**

**UDAQ Response:** The DAQ disagrees with this comment. The commenter appears to be confused on how to determine whether a modification is major. The comment ignores the analysis performed by the source and reviewed by UDAQ. That analysis requires a comparison between baseline actual emissions and the projected emissions following the project (see response to comments #19 and #22).

In contrast to comments #19 and #22, the commenter here claims that UDAQ merely looked at the previously permitted emission levels and concluded that the modification was not subject to NSR. As explained in previous responses, this is incorrect. Baseline emissions were determined, the projected emissions following the change were calculated, and the difference between these was then compared to the significance level (R307-101-2, definition of net emissions increase). This comparison was performed for all pollutants regulated for purposes of major NSR/major PSD (see the revised NOI page 37 and Attachment B, as well as responses to comments #19 and #22).

**Comment #55a: DAQ appears to have used Tesoro’s emissions limitations set forth in the 1994 PM<sub>10</sub> SIP as proxies for Tesoro’s baseline emissions. See ITA (abstract). The ITA reasoned that because Tesoro’s post-project emissions would not exceed its permitted emission levels, the modification was not subject to NSR.**

**UDAQ Response:** UDAQ is unsure of the commenter’s basis for this comment. In the source plan review, the abstract and project description states that the project is a minor modification (see RN103350058-12). It appears that the commenter has confused the SIP emissions limits mentioned in the abstract as the baseline emissions for this project. This is incorrect. Rather, the modification is minor (and therefore not subject to the major NSR provisions of R307-403 and R307-405) for the reasons outlined in the source plan review (RN103350058-12) and discussed in response to comment #19. The determination of baseline emissions is included in Attachment B of the revised NOI and in general was determined in accordance with R307-101-2, definition of “net emissions increase.” In this specific case, Tesoro’s baseline emissions are calculated from the actual emissions as outlined in the NOI (Attachment B). UDAQ finds no mention of the 1994 PM<sub>10</sub> SIP emission limitations anywhere in the ITA or source plan review. Therefore, UDAQ sees no basis for the commenter’s assumption that such emissions were used as proxies during the calculations.

**Comment #55b: “DAQ should not have relied on Tesoro’s permitted emissions limitations for concluding that the Waxy Crude Project would not result in significant emissions increases. This reasoning is inconsistent with the regulatory process, which requires a comparison of actual baseline emissions to projected actual emissions.”**

**UDAQ Response:** Please see the response to comments #19 and #55 above.

**Comment #56: Aggregating the emissions increases projected in the FCCU Reliability Project NOI and the Waxy Crude NOI reveals that this project exceeds the significance threshold for each reported pollutant.**

**UDAQ Response:** UDAQ disagrees with this comment. As previously stated in the responses to comments #43-#54, the FCCU Reliability Project is not aggregated with the current project. Further, project-related emissions aren’t simply added regardless of aggregation. Rather, if aggregation occurs the comparison is always made between baseline actuals (which would include some period prior to the initial project) and post-project projected actuals (R307-101-2, definition of “net emissions increase”). If the projects were aggregated, such as was the case for the CONOx and Overhead Condensing projects, then the post-project projected actuals would need to include the combined total effect of all projects. This is substantially different than adding the individual differences together, as this would double count the emissions increase. Such an approach is incorrect and does not match the procedure outlined in the definition of net emissions increase as found in either R307-101-2, 40 CFR 51 or 40 CFR 52.

Finally, the comment does not establish the relevance of the values listed in Table 2 of the comment letter. Although the comment claims that UDAQ used the values in the table, the comment does not explain how, where or why they were used in UDAQ’s review of the NSR analysis performed by Tesoro. For a discussion of the process UDAQ did follow, see response to comment #19.

**Comment #57: The FCCU NOI did not provide any estimates of increased emissions levels for the other pollutants, which is another reason that it is valuable to compare the actual reported facility wide emissions from 2006 with Tesoro’s projected facility wide emissions for the purpose of evaluating whether this project should be subject to NSR.**

**UDAQ Response:** As explained in previous responses, UDAQ did not aggregate the FCCU Reliability project with this current project. The reason that Tesoro did not include emissions estimates for the FCCU project in 2006 was because no increase was anticipated as a result of that project. UDAQ issued that Approval Order in 2007, and any concerns should have been raised in connection with that permitting action. In any event, as a safeguard, Tesoro voluntarily accepted limits on the three pollutants identified in the comment. The commenter is correct that Tesoro had to calculate its facility wide emissions for the purpose of establishing baseline emissions. For a discussion of that process, see response to comment #19. Additionally, see response to comment #43 through #54 for a discussion on why UDAQ did not aggregate the two projects.

**Comment #58: Because PM<sub>2.5</sub> is a precursor to several pollutants, the significance standard is actually 10 tpy of direct PM<sub>2.5</sub> emissions; 40 tpy of SO<sub>2</sub> emissions; and 40 tpy of NO<sub>x</sub> emissions, unless demonstrated not to be a PM<sub>2.5</sub> precursor.**

**UDAQ Response:** UDAQ disagrees with this comment. Neither the EPA nor any State of Utah regulatory action has established PM<sub>2.5</sub> as a precursor to any other pollutant. Although PM<sub>2.5</sub> is a subset of PM<sub>10</sub>, it is reviewed independently. It is a separate regulated pollutant, which has a single defined precursor pollutant of its own - SO<sub>2</sub> (40 CFR 51, Appendix S). States may establish additional precursor pollutants to PM<sub>2.5</sub> through a SIP process. However, UDAQ must default to the values listed in Appendix S until such time as UDAQ completes its PM<sub>2.5</sub> SIP process. The significance amounts found in Appendix S for PM<sub>2.5</sub> are as follows: 10 tpy of direct PM<sub>2.5</sub> emissions and 40 tpy of sulfur dioxide emissions.

**Comment #59: Comparing Tesoro's actual emissions from 2006 (the year before the FCCU upgrade) to projected future actual emissions set forth in Tesoro's application, suggests that this is a major modification for each criteria pollutant. In an effort to estimate the cumulative actual emissions increases caused by Tesoro's multiple minor modifications between 2006 and 2012, the chart below compares Tesoro's facility wide emissions from 2006 to its projected facility wide emissions.**

**UDAQ Response:** The commenter is apparently confused on the difference between projected actual emissions and SIP-based limits on total PTE. Projected actual emissions and SIP-based total PTE are not directly related. The table included with the comment incorrectly implies the opposite. Rather, the current ITA contains a set of limits as a direct result of the 2005 SIP revision. The projected actual emissions estimated as a result of this project are discussed in the source plan review in reviewer comment #9 and in the NOI at section 3.1.1. Please see also response to comments #19 through #25.

**Comment #60: This is a general comment on the effects of pollution on human health although targeting the pollution from flaring.**

**UDAQ Response:** Please see response to comment #4 for comments on general health effects.

**Comment #60a: Comment on EPA National Enforcement Initiative.**

**UDAQ Response:** The EPA initiative referred to is a enforcement issue. The current action is governed by established federal and state NSR rules and as such is separate and unrelated to EPA enforcement efforts.

**Comment #61: Automatically exempting flare emissions from NSR analysis conflicts with the Clean Air Act's requirement of continuous compliance.**

**UDAQ Response:** This comment is a general statement and as such it is difficult to understand the relevance to the ITA. Additionally, the comment makes no reference to any aspect of the NOI, the source plan review, or any term or condition of the ITA. To the extent that this comment attempts to take issue with the NSR analysis in this permitting action, UDAQ responds that the flare emissions were not exempted from the NSR analysis. Please see response to comment #3 where UDAQ affirms that all requirements of the proposed permit apply at all times. Therefore, continuous compliance is required and flare emissions are accounted for in the NSR analysis (see NOI Section B.1.3, B.1.4, B.2.6, and Attachments B-15, B-16, B-32 and B-33).

As support, the comment refers to three circuit court opinions relating to SIP actions. Commenter's reliance on SIP conditions, challenges to SIPs, and other SIP-related arguments ignores the fact that they are SIP-related, and must be addressed during the SIP process. Therefore, the comments are not germane to the permitting process.

**Comment #62: Tesoro's NOI excludes flare emissions from NSR analysis, and the DAQ's intent to approve the NOI disregards the Clean Air Act's requirement of continuous compliance. An Approval Order should not be issued until the nature, frequency, and extent of Tesoro's SSM emissions has been factored into the NSR analysis.**

**UDAQ Response:** UDAQ disagrees with this comment. The flare emissions are accounted for in the NSR analysis. However, the flares are not being modified, nor are the flares experiencing a change in their method of operation. Please see response to comments #35 and #36. For a discussion on continuous compliance and SSM emissions, please see response to comments #3 and #61.

**Comment #63: Automatically exempting flare emissions is preventing attainment.**

**UDAQ Response:** Please see response to comment #61 and #62. This general comment focuses on the SIP process and urges UDAQ to reconsider the ITA, but makes no reference to any aspect of the NOI, the source plan review, or any term or condition of the ITA. The commenter claims that automatically exempting flare emissions is preventing attainment but provides no evidence to support this statement. In any event, the UDAQ is currently involved in a SIP development process and will be imposing various requirements that will, when taken together, show attainment.

**Comment #64: If challenged in court, the Approval Order will be reviewed in a manner that furthers the goals of the PSD program.**

**UDAQ Response:** This comment makes no reference to any aspect of the NOI, the source plan review or any term or condition of the ITA. For a discussion on the claim of a blanket exemption of flare emissions please refer to response to comments #61, #62, and #63. Furthermore, Condition I.6.B of the ITA requires that Tesoro verify that its post-project emissions do not exceed the estimates contained in the NOI, for purposes of verifying compliance with the major NSR applicability analysis as required by 40 CFR 52.21(r)(6) (the reasonable possibility monitoring requirement). Therefore, the commenter is incorrect to claim that there is a "blanket exemption of flare emissions from NSR analysis," because those emissions were addressed in the NSR analysis.

Finally, the comment incorrectly identifies this permitting action as a PSD action. The proposed permitting action constitutes a minor modification and is not subject to PSD (see response to comment #13).

**Comment #65: To minimize harmful effects on human health, Tesoro should be required to implement flare minimization plans and Energy Star Guidelines for flaring.**

**UDAQ Response:** Although the commenter cites a Bay Area regulation requiring a flare minimization plan, no similar requirement exists in Utah. In addition, the EPA Energy Star Guidelines are recommendations for refinery plant managers, not regulatory requirements. The comment makes no

reference to any aspect of the NOI, the source plan review, or any term or condition of the ITA. See also response to comment #2.

**Comments from EPA Region 8 were received in two letters dated April 23, 2012 and June 7, 2012.**

**Comment #66: Use of the demand growth exclusion needs further explanation.**

**UDAQ Response:** This comment is essentially identical to comments #15, #16 and #19 as supplied by WRA. Please see response to those comments.

**Comment #67: Ambient impact analysis for compliance with 1-hour NO<sub>2</sub> National Ambient Air Quality Standard (NAAQS), and/or initiation of 1-hour NO<sub>2</sub> monitoring in the area, needs to be considered.**

**UDAQ Response:** Ambient impact analysis is addressed by R307-410, specifically R307-410-4, Modeling of Criteria Pollutant Impacts in Attainment Areas. As discussed in that rule, a source does not need to provide modeling unless the modification increases the total controlled emission rate above the values listed in Table 1. For oxides of nitrogen (NO<sub>x</sub>) that value is 40 tons per year. This project is not increasing the total allowed emissions of NO<sub>x</sub> from the source, which remain capped at 598 tons per rolling 12 month period. Increases in actual emissions from this project are estimated at 27.15 tpy, which are also less than the 40 ton trigger level. Previous modeling of NO<sub>x</sub> emissions from this source was evaluated at the capped emissions level, and the emissions have not caused a violation of the NO<sub>2</sub> NAAQS.

As discussed in response to comment #41, the hourly design feed rate of the FCCU is not increasing. Therefore, the short term or hourly emissions rate is not increasing. The 27.15 tpy increase in NO<sub>x</sub> is a result of increased annual utilization. Upon review of all relevant factors, UDAQ has no reason to expect a change in concentrations against the one hour standard as a result of this action.

EPA goes on to state that the concern is the combined emissions from the Tesoro refinery, other sources in the area and the nearby highway (Interstate 15). They further state that UDAQ should conduct a cumulative impacts analysis and/or establish a monitor for 1-hour NO<sub>2</sub> at a representative site in the area.

Pursuant to R307-405-12 & 14, a cumulative impacts analysis is only required for “significant” increases of the pollutant of concern. As mentioned in response to comment #19, this action is not a “significant net emissions increase.”

The UDAQ currently monitors the 1-hour NO<sub>2</sub> ambient concentrations in the area of the refineries. Specifically, there is a monitor located in Bountiful at Viewmont High School and another is located at Hawthorne Elementary School, which is the design monitor for SIP development. The High School is approximately 9 miles north of Tesoro’s operations and Hawthorne is approximately 5.5 miles south. Both monitors consistently monitor 1-hour NO<sub>2</sub> levels well below the standard (Utah 2012 Air Monitoring Network Plan, page 44).

Finally, the UDAQ intends to site a third monitor in the Salt Lake and Davis County area (Utah 2012 Air Monitoring Network Plan, page 45). This will provide another reference for ambient concentration data that UDAQ can use in its planning efforts.

**Comment #68: Emission reductions used to net out of major nonattainment New Source Review (NSR) for SO<sub>2</sub> need to be enforceable.**

**UDAQ Response:** The emissions reductions used to net out of major NSR review are enforceable (see condition II.B.3.a and II.B.3.a.1 of the ITA). This comment is also addressed by responses to comments #19, #20, and #21.

**Comment #69: EPA made two separate comments related to a FAQ sheet provided on UDAQ's website for informational purposes under the heading of this permitting action.**

**UDAQ Response:** Please see response to comments #8 and #9.

**Comment #70: Proposed removal of emission limit previously taken to avoid major NSR review.**

**UDAQ Response:** This comment is identical to WRA comment #13, including the incorrect reference to 40 CFR 52.21, and including the same EPA memoranda referenced by the WRA. Therefore, please see response to comment #13.

**Comment #71: EPA cites the comments provided by WRA (comments #17, #19, # 42 through #54) and recommends that UDAQ address those comments before issuing the permit.**

**UDAQ Response:** This comment is noted. Please see the responses to those comments identified above. Pursuant to R307-401-7(3), UDAQ must consider all comments submitted during the public comment period. Therefore, EPA's recommendation is unnecessary. As no additional technical or procedural concerns were raised with respect to the two ITAs, no changes were made.

**Other written comments from groups or organizations were received during the comment period or during the public hearing.**

**Comment #72: The Rose Park Community Council submitted a comment expressing general favor and support of the Waxy Crude Processing Project.**

**UDAQ Response:** The comment is noted. However, as no technical or procedural concerns were raised with respect to the two ITAs or the source plan reviews behind them, no changes were made.

**Comment #73: Newfield Rocky Mountains submitted a comment expressing general support of the Waxy Crude Project as a source of employment and local economic growth.**

**UDAQ Response:** The comment is noted. However, as no technical or procedural concerns were raised with respect to the two ITAs or the source plan reviews behind them, no changes were made.



**Comment #74: The Utah Manufacturers Association submitted a comment expressing general support of the Waxy Crude Processing Project as a source of local economic growth.**

**UDAQ Response:** The comment is noted. However, as no technical or procedural concerns were raised with respect to the two ITAs or the source plan reviews behind them, no changes were made.

**Comment #75: UDAQ received 101 separate submissions of a letter which read:**

“As an employee at Tesoro’s Salt Lake City refinery and a local resident, the future of this community is very important to me and my family. As such, I support Tesoro’s crude processing project.

“At a time when Utah is making significant strides in its efforts to reduce unemployment and increase revenue, I support such an investment that will reinforce Utah’s continued growth. This project will make significant contributions to the local economy by encouraging in-state crude oil production while minimizing environmental impact.

“The Salt Lake Crude Processing Project will accommodate the use of more locally produced crude oils – particularly black and yellow wax crude oil from Utah’s Uinta basin. Increased local crude oil production and construction activities associated with the project will support indirect job opportunities and stimulate overall economic activity in the area.

“Tesoro is proactively addressing air emissions by investing in technology that will reduce sulfur dioxide (SO<sub>2</sub>) emissions by more than one percent in Salt Lake County.

“I encourage the Utah Department of Environmental Quality to issue the necessary permits for the Tesoro Salt Lake City Crude Processing Project. This would be a positive step forward for the future of our community, providing necessary economic stimulation, while having a negligible impact on the environment.”

**UDAQ Response:** The comment is noted. However, as no technical or procedural concerns were raised with respect to the two ITAs or the source plan reviews behind them, no changes were made.

**Comment #76: Three pamphlets were submitted as written comments during the public hearing:**

Pamphlet #1 – titled “Peaceful Uprising presents... Community Audits,” this pamphlet was an invitation to attend a training seminar on civil disobedience.

Pamphlet #2 – titled “Right Wing Watch – ALEC,” this pamphlet was a discussion of the American Legislative Exchange Council presented by People for the American Way Foundation.

Pamphlet #3 – titled “What you need to know about public health and safety risks from Utah’s Refineries,” this pamphlet was a re-printing of certain information obtained from the internet website of the Utah Physicians for a Healthy Environment. The publication states that it was not authorized by UPHE.

**UDAQ Response:** The comments are noted. However, as no technical or procedural concerns were raised with respect to the two ITAs or the source plan reviews behind them, no changes were made.

**Comment #77: Two citizens submitted comment letters expressing general support for the Waxy Crude Processing project.**

**UDAQ Response:** The comments are noted. However, as no technical or procedural concerns were raised with respect to the two ITAs or the source plan reviews behind them, no changes were made.

**Comment #78: UDAQ received 61 postcards which read as follows:**

“Support for Tesoro’s Salt Lake City Refinery.”

“I encourage the Utah Department of Environmental Quality to issue the necessary permits for the Tesoro Salt Lake City Crude Processing Project. The project will make significant contributions to the local economy by encouraging in-state crude oil production and will decrease Salt Lake County’s annual sulfur dioxide (SO<sub>2</sub>) emissions. At a time when Utah is making significant strides in its efforts to reduce unemployment and increase revenue, I support such an investment that will reinforce Utah’s continued growth.”

**UDAQ Response:** The comment is noted. However, as no technical or procedural concerns were raised with respect to the two ITAs or the source plan reviews behind them, no changes were made.

**Comment #79: Included on some of the postcards were additional hand-written comments. These comments also expressed general approval of the project from the point of view of jobs, less expensive gasoline, improving the local economy, or Tesoro’s history as a neighbor.**

**UDAQ Response:** The comments are noted. However, as no technical or procedural concerns were raised with respect to the two ITAs or the source plan reviews behind them, no changes were made.

**UDAQ received five comment letters expressing disapproval of the Waxy Crude Processing project. As these letters covered multiple points or individual comments, UDAQ will address each comment separately, rather than treating each letter as a single comment.**

**Comment #80: “Why would we okay an oil refinery plant an expansion permit to actually increase the pollution in an already failing air shed?”**

**UDAQ Response:** Please see response to comment #4.

**Comment #81: “”Unless Tesoro can find a way to actually reduce pollution with its wax plant proposed additions, the permit should be rejected.”**

**UDAQ Response:** Please see response to comments #4 and #28.

**Comment #82: “As you know, the state plan for reducing PM<sub>2.5</sub> pollution will not be ready until the end of 2012. It is unwise to grant a permit for an expansion which the DAQ admits will create new pollution before that plan is completed. Planning to evaluate emissions after the plant expansion is constructed makes no sense. How will the DAQ enforce the new plan at that point?”**

**UDAQ Response:** Please see response to comment #4.

**Comment #83:** “Tesoro has also not addressed the problem of the increased diesel traffic to their refinery as wax crudes are hauled to their plant. Diesel exhaust fumes will also add to our valley air pollution.”

**UDAQ Response:** Please see response to comments #7 and #40.

**Comment #84:** “I feel this crude should be processed near the location of the oil production sources and the finished products then piped to consumer locations. This eliminates both increased crude truck traffic and further pollution from the increased crude processing here in the Salt Lake Valley and Davis County.

In my opinion, I do not think any of the refineries in the Salt Lake and Davis County areas should be allowed to increase crude capacity from their present documented rate. I feel the Salt Lake Valley cannot and should not sustain any more pollution than it has now. Population growth, new light industry, and increased vehicle travel will undoubtedly increase our pollution. These are things almost impossible to prevent.”

**UDAQ Response:** Please see response to comments #4, #7, #40, #90 and #100a.

**Comment #85:** “Apparently, Texas refineries’ VOC inventories have been under estimated by 10-100%. So question #1 for me is: Are your figures accurate or low?”

**UDAQ Response:** Please see response to comments #2 and #99.

**Comment #86:** “What is the Maximum Incremental Reactivity (MIR) profile of all our airshed’s refineries’ current Volatile Organic Compounds taken together? What is the MIR profile of the VOCs of the proposed expansions?”

**UDAQ Response:** The commenter provided a definition of MIR as “the maximum amount of ozone that can be formed by adding an incremental amount of a particular VOC to a mixture of NO<sub>x</sub>-rich air. Units are grams of ozone per gram of VOC.”

The commenter’s questions appear to request that UDAQ provide a cross-sectional analysis of all VOCs emitted by the refineries and determine the maximum amount of ozone being created from those VOCs. UDAQ disagrees that such an analysis is required. The MIR referenced by the commenter is a controlled laboratory analysis to determine the amount of ozone formed under idealized conditions, and does not translate to real-world conditions. Utah’s refineries are separated geographically, have different operating scenarios, and differ temporally in their own emission profiles. Ozone formation is dependent on numerous factors including available sunlight, atmospheric mixing, amount of both VOC and NO<sub>x</sub> present, as well as other chemicals that may aid or interfere with the formation process. Ozone is regulated through Utah’s rules in R307-325 through -343, R307-401 and R307-420.

**Comment #87:** “Is heavy black wax cleaner?”

**UDAQ Response:** Based on the previous paragraph of the comment letter, which discusses the emissions of VOCs and HAPs from the refining of light, sweet crude oil, UDAQ assumes that this question refers to the difference in emissions from refining each type of crude oil. Therefore, please see the response to comment #12.

**Comment #88:** “Has anyone estimated the air pollution caused by diesel trucks hauling this stuff into the valley day and night for the foreseeable future?”

**UDAQ Response:** Please see the response to comments #7 and #40.

**Comment #89:** “The PM<sub>2.5</sub> workgroups haven’t quite found a way to EPA compliance. With refinery expansion, it’d be impossible.”

**UDAQ Response:** Please see the response to comment #4.

**Comment #90:** “If refineries have to be built, they should only be built somewhere that isn’t in a mountain bounded valley, isn’t so densely populated. We do have wide open spaces more suitable much closer to the drill sites, much less net harm.”

**UDAQ Response:** Tesoro’s Salt Lake City refinery began operations in 1908. This classifies the refinery as an existing source under air quality rules. Therefore UDAQ has analyzed Tesoro’s submission as a modification following the requirements outlined in R307-401. Those rules do not require that the source submit an analysis of relocating an existing source and the commenter does not identify any such requirement.

**Comment #91:** “I realize that you have to work with the mandate you have from Gov. Gary Herbert and the Legislature and thus cannot deny this permit. However, I think you can make stringent requirements. As a minimum, you can require no NET increase in pollution of any kind, including GHG SO<sub>2</sub> and particularly all HAPs.”

**UDAQ Response:** The commenter does not specify or identify the mandate referred to in the comment. Utah reviews permit applications and issues permits in accordance with applicable law. All pollutants emitted by the refinery have been addressed in this permitting action. Also, please see response to comment #110.

**Comment #92:** “If the DAQ insists on doing an economic analysis when deciding to grant a permit to a polluting industry, you must change your mission statement and you must really do a complete economic analysis, including the health costs of Tesoro’s expansion.”

**UDAQ Response:** Please see the response to comments #49, #51 and #96.

**Comment #93:** “The truck pollution is not counted in Tesoro’s increased pollution and needs to be counted.”

**UDAQ Response:** Please see the response to comments #7 and #40.

**Comment #94:** “...Tesoro’s expansion will require expanded extraction of waxy crude in the Uintah basin where there is already a ‘surprising’ very high level of ozone. Although the official cause of Uintah’s ozone is still being investigated, it will surely turn out to be the expanded extraction of waxy crude.”

**UDAQ Response:** The NOI identifies the economic incentive of increased production of waxy crude as one justification for pursuing the project (see response to comments #49 and 51). The impact of the production of waxy crude in the Uintah Basin is independent of this project. However, as no technical or procedural concerns were raised with respect to the two ITAs or the source plan reviews behind them, no changes were made.

**Comment #95:** “The refineries as a group should be required to fund the scientific health studies that would actually supply the information needed about the health effects of HAPs for Salt Lake and Davis Counties. The lack of such health studies is a giant missing piece in the permitting process. No permit applicant could supply a reliable analysis if required because the studies have not been done.”

**UDAQ Response:** With respect to general health effects of pollution, please see response to comment #5. The comment is otherwise noted. As no technical or procedural concerns were raised with respect to the two ITAs or the source plan reviews behind them, no changes were made.

**Comment #96:** “Economic analysis is not the business of the DAQ.”

**UDAQ Response:** Please see the response to comments #5, #49 and #51. UDAQ does not address the economic viability of a particular project. UDAQ only reviews economics during the application of BACT (see R307-401-2 definition of “best available control technology”).

**Comment #97:** “DAQ is not requiring Tesoro to account for the actual pollution resulting from their expansion. The real calculation of Tesoro’s actual current pollution needs to be accurate and Tesoro’s future pollution needs to include pollution from the added diesel trucks on our highways....”

**UDAQ Response:** This is another comment on the possible increase in diesel truck traffic. Please see response to comments #7 and #40.

**Comment #98:** Comments on flaring emissions, unavoidable breakdown rule and the Energy Star Guide.

**UDAQ Response:** These general comments are similar to comments #36, #62 and #65. Please see the response to those comments.

**Comment #99:** Texas Commission on Environmental Quality paper presented in 2008.

**UDAQ Response:** The paper referenced by the comment was a presentation by the Texas Commission on Environmental Quality (TCEQ) regarding the “role played by certain light olefins in the rapid, intense formation of ozone in the Houston-Galveston-Brazoria (HGB) ozone nonattainment area.”

The commenter appears to be concerned with TCEQ's efforts to "reconcile more recent inventories with ambient measurements," and the relative concentrations of highly-reactive, specific VOC species in those ambient measurements.

The paper is vague on the specifics of the apparent discrepancy between reported emissions and measured ambient concentrations. Although the paper identified possible emitting units that are often found at refineries (flares, cooling towers, vent gas streams), it also identified the Houston industrial corridor, barge traffic, and oil & gas production equipment as possible contributors as well.

The paper's primary focus is on how TCEQ combined:

- large scale modeling analyses
- reevaluation of reported VOC speciation
- ambient measurement techniques

to develop new rules to address the ozone non-attainment area. The paper mentions that TCEQ's efforts were part of a SIP development process, and not an individual permitting exercise. Please see response to comments #4, #28, #61 and #63.

**Comment #100: "Tesoro has a very bad safety record. DAQ needs to require regular inspections and monitoring of equipment to avoid another Tesoro tragedy."**

**UDAQ Response:** Industrial safety concerns are the purview of the Occupational Health and Safety Administration (OSHA). As no technical or procedural concerns were raised with respect to the two ITAs or the source plan reviews behind them, no changes were made.

**Comment #100a: "Refineries simply do not belong in residential areas."**

**UDAQ Response:** The Tesoro refinery has been in operation at its present location since 1908. UDAQ processes NOIs and issues AOs based on existing regulations. Those regulations do not require that a source relocate its operations, and the commenter does not identify any such requirement. The comment is noted. As no technical or procedural concerns were raised with respect to the two ITAs or the source plan reviews behind them, no changes were made.

**Comment #101: "Since DAQ originally proposed that Tesoro reduce SO<sub>2</sub> during winter months (winter, cap on SO<sub>2</sub> 3.699 tons/day; summer cap 4.374 tons/day) it seems apparent that the reduced amount could be achieved all year. Shouldn't Tesoro be required to 'do its part' ...?"**

**UDAQ Response:** Please see response to comments #4 and #19.

**Comment #102: "Tesoro's NOI is filled with items not yet determined and with contradictions ... The DAQ Intent to Approve is also disturbingly vague."**

**UDAQ Response:** The commenter refers specifically to two sections of the NOI: the requirements of the benzene waste NESHAP and the unavoidable breakdown rule requirements. When referring to the ITA, the commenter specifically cites general condition I.5 of DAQE-IN103350059-12. In general UDAQ disagrees that these topics are "disturbingly vague." As explained in response to comment #39, the

benzene waste NESHAP specifically allows a source to choose a control methodology when that source reaches a specific emission threshold. UDAQ has identified that the requirements of the benzene waste NESHAP apply – see Section III of DAQE-IN103350058-12 which identifies 40 CFR 61 Subpart FF as applicable. General requirement I.5 of DAQE-IN103350058-12 shows applicability of the unavoidable breakdown rule. This requirement is also found as general condition I.6 in the second ITA (DAQE-IN103350059-12). To clarify, general condition I.5 of DAQE-IN103350059-12 is a hold-over condition that has been replaced with the more definitive language of condition I.6. Therefore UDAQ will remove condition I.5 from DAQE-IN103350059-12.

**Comment #103:** “It seems incredible that ‘Tesoro is operating below its allowable emissions’ when Salt Lake and Davis Counties are in a non-attainment areas [sic] and we had at least 20 red alert days just one winter ago.”

**UDAQ Response:** Please see response to comments #4, #28, #61 and #63.

**Two consecutive public hearings were held on April 17, 2012. The first hearing was for DAQE-IN103350058-12, while the second hearing was for DAQE-IN103350059-12. The written comments submitted during that hearing have previously been addressed (see comments #85 through #90 above). A transcript of the verbal comments received has been attached to this response memorandum. Most of the comments raised during the public hearing were essentially identical to comments already addressed in this memorandum. The comments that are sufficiently distinct from those already addressed are included below:**

**Comment #104:** A copy of the ITA document should be provided at the public hearing.

**UDAQ Response:** Pursuant to a request for hearing, UDAQ held two hearings (one on each ITA) in compliance with R307-401-7. R307-401-7 states the requirements for public review of a proposed agency action. Prior to the hearing, all of the relevant documents were made available throughout the public comment process. Although not required, the NOI, source plan reviews, and both ITAs were also included in electronic form on UDAQ’s website. Therefore, UDAQ has complied with the requirements of R307-401-7 and no changes were made to the ITAs. In the future, UDAQ will consider making a copy of the relevant ITA available at the public hearing for reference purposes.

**Comment #105:** General comment on the widespread use of cars, and the associated odors that arise from the combustion of gasoline.

**UDAQ Response:** The comment is noted. As no technical or procedural concerns were raised with respect to the two ITAs or the source plan reviews behind them, no changes were made.

**Comment #106:** “I think that when you are loading gasoline you need to capture the fumes.”

**UDAQ Response:** UDAQ interprets this comment to refer to the vapor recovery required during loading and unloading processes at the plant. Tesoro uses a vapor recovery system at all of its loading/unloading racks. A calculation of the emissions from these units was included in Tesoro’s NOI in Attachment B

(see specifically Attachments B-27, B-28, B-29 and B-43). These components are required by and addressed in several federal standards, the most pertinent of which are 40 CFR 60 Subpart GGG and 40 CFR 63 Subpart EEEE. These standards are included in the source plan reviews and both ITAs in Section III: Applicable Federal Requirements.

**Several commenters also supplied comments via electronic mail. These comments have been included in the administrative record. The following individual comments have not been previously addressed in this response memorandum.**

**Comment #107:** The commenter claims that UDAQ does not have enough information to technically evaluate section 2.5 of the NOI, and requests that Tesoro supply the following to both the commenter and UDAQ:

- **Piping and instrumentation drawings showing all AO/NOI related changes since 2006**
- **Process flow diagrams for the above**
- **Instrument loops and electrical schematics for the above**
- **Engineering design and technical specifications for the above**
- **Operations procedures for the above**
- **Process hazard analysis for the above**
- **Management of change documents for the above**

**The commenter then references both 40 CFR 52.21 and 29 CFR 1910 as a basis for requiring this information.**

**UDAQ Response:** UDAQ disagrees with this comment. The information required for the Waxy Crude Processing Project's NOI can be found in R307-401-5(2). None of the above requested information is listed in that rule. As explained in the response to comments #13 and #19, this permitting action is not subject to the requirements of 40 CFR 52.21, which address PSD and are not applicable to minor modifications. In any event, the commenter is incorrect that 40 CFR 52.21 requires this information. Finally, the requirements of 29 CFR 1910 are for Occupational Safety and Health Standards which are addressed by the Occupational Safety and Health Administration (OSHA).

**Comment #108:** "It really would be wiser if we placed the burden of proof on would-be polluters to prove that their increased pollution is SAFE, rather than our young and old and sick having to prove that it is UNSAFE. Wouldn't that really be more prudent? I hope that you and your colleagues could keep that in mind when considering permits. Demand health studies. Demand air quality models that include all the factors (like how the crude is going to get to the refineries - diesel truck?? seriously?) Demand that our citizens' health come before profits."

**UDAQ Response:** UDAQ's permitting program relies on standards established by EPA and state rules that set the requirements for what is reasonably expected for the evaluation of the impacts from a modification to an existing facility. These requirements have changed over time as additional technical capabilities such as air quality models have been developed. EPA is also required to evaluate existing regulations to determine if there is "residual risk" after setting the hazardous air pollutant maximum available control technology requirements for source categories. Please also see response to comment #5.



**Comment #109: General comment regarding allowing the use of hydrogen fluoride (HF) at the refineries.**

**UDAQ Response:** This permitting action did not require that UDAQ address the utilization of HF in the refining process. UDAQ complied with the approval order requirements established in R307-401 for this action.

**Comment #110: General comment on greenhouse gas (GHG) emissions from the burning of fossil fuels.**

**UDAQ Response:** Tesoro properly accounted for the increase in GHG emissions in the NOI (see Attachment B of the NOI). UDAQ addressed GHG emissions in reviewer comment #10 of the source plan review.

**Comment #111: Comment regarding the effects of a spill of waxy crude and what procedures are in place to address that possibility.**

**UDAQ Response:** This comment specifically addresses the possibility of spills during the transportation of waxy crude to the refinery, although the concern could also apply to transportation of finished products from the refinery. Those concerns are addressed by several other local, state and federal agencies, but not by the UDAQ.

**Comment #112: "...it appears to me that the issuance of the permit without a second public hearing would violate the law. This is because of complete lack of notice of the subject matter of the hearing at the hearing site and the lack of availability of even a single copy or description of the matter then under consideration at the public hearing ... A hearing on a proposal cannot fairly occur in Utah or under the Clean Air Act without the agenda or other notice (i.e. – name/ summary of the proposal under consideration) being posted or available at the site of the hearing."**

**UDAQ Response:** Please see response to comment #104. The public hearing requirements are found in R307-401-7 Public Notice. Those requirements are as follows:

*(iv) Public Hearing. A request for a hearing on the proposed approval or disapproval order may be submitted to the executive secretary:*

*(A) within 10 days of the date the notice in (1) above is published for comment periods established under (i) above, or*

*(B) within 15 days of the date the notice in (1) above is published for comment periods established under (ii) above.*

*(v) The hearing will be held in the area of the proposed construction, installation, modification, relocation or establishment.*

*(vi) The public comment and hearing procedure shall not be required when an order is issued for the purpose of extending the time required by the executive secretary to review plans and specifications.*

*(3) The executive secretary will consider all comments received during the public comment period and at the public hearing and, if appropriate, will make changes to the proposal in response to comments before issuing an approval order or disapproval order.*

UDAQ held the two public hearings (one for each ITA) on April 17, 2012, at 195 North 1950 West, Salt Lake City, Utah, which is approximately four miles from the refinery. The hearings were held in response to requests as outlined above. UDAQ documents its consideration of all submitted comments in this memorandum. Therefore UDAQ has met the requirements of R307-401-7.

**Some verbal comments were submitted via telephone message. While no transcript of these messages was prepared, the commenters' names have been included in the public record. All of the comments received by telephone were substantively equivalent to other comments already addressed by this response memorandum.**

**Tesoro Refining and Marketing submitted four letters following the publication of the two ITAs. These documents – dated May 14, 2012, June 7, 2012, June 25, 2012 and July 25, 2012 – were submitted either in response to a direct request for additional information from UDAQ (see response to comment #6), or to provide Tesoro's response to specific comments. UDAQ has elected to address these submissions as comments or comment addendums as found below:**

**Comment #113:** In a letter dated May 14, 2012, and received by UDAQ on May 17, 2012, Tesoro provided a clarified listing of the specific MACTs (40 CFR 63) that apply to the equipment affected by the Waxy Crude Processing project.

**UDAQ Response:** As discussed above in response to comment #6, UDAQ requested this information be provided to address the ambient air impact (modeling) requirements of R307-410-5.

**Comment #114:** Tesoro's June 7, 2012 letter.

**UDAQ Response:** In this letter Tesoro provided their response to several comments raised by WRA. Given the length of the letter, UDAQ has elected to address each topic individually as comments #114a through #114w.

**Comment #114a: Public Notice Requirements.** Tesoro supplied information related to WRA's comment regarding the supplementing of the record or analysis, and the need for additional public comment.

**UDAQ Response:** Tesoro's additional information is in agreement with a subset of UDAQ's own analysis. UDAQ's analysis is found in the response to comment #10c. The comment is otherwise noted.

**Comment #114b: Refinery Flares and Flaring Emissions – Emissions from flaring of gases from the VRU vessels during SSM events are unaccounted for.**

**UDAQ Response:** Tesoro's submission states that the emissions from flaring during SSM events at the VRU were accounted for in the NOI. Tesoro references the NOI section B.1.4 and Attachment B-33 for the relevant emission calculations. UDAQ agrees with Tesoro's submission as referencing the appropriate sections of the NOI.

**Comment #114c: Refinery Flares and Flaring Emissions – Tesoro's NOI excludes flare emissions from NSR analysis.**

**UDAQ Response:** Tesoro's response included the appropriate references to the NOI. UDAQ agrees that Tesoro has referenced the appropriate sections of the NOI. Please see response to comments #35, #36, #61 and #62.

**Comment #114d: Refinery Flares and Flaring Emissions – Tesoro should reduce emissions from its flares.**

**UDAQ Response:** Tesoro's submission addressed the future applicability of 40 CFR 60 Subpart Ja to the refinery flares. Although the flares will not be modified by this permitting action (see response to comments #35 and #36), UDAQ's SIP process will address the long term requirement to reduce flare emissions. Please see the responses to comments #4, #61, #62 and #63.

**Comment #114e: Hazardous Air Pollutant Emissions**

**UDAQ Response:** Tesoro's letter includes reference to R307-410-5 and the applicability of the Clean Air Act's Section 112. UDAQ agrees with Tesoro's analysis. Please see response to comment #6.

**Comment #114f: Truck Traffic**

**UDAQ Response:** Tesoro's response discussed truck traffic emissions as subject to Title II of the Clean Air Act. UDAQ agrees that these emissions are regulated under Title II of the CAA. Please see response to comments #7 and #40.

**Comment #114g: Effects of Waxy Crude Feedstock**

**UDAQ Response:** Tesoro's submission included reference to the submission of a revised NOI on December 21, 2011 as a direct result of evaluating the effects of yellow wax crude in addition to the black wax crude anticipated in the original NOI (submitted September 21, 2011). Therefore, please see response to comment #12.

**Comment #114h: Requests to Relax Emission Limits**

**UDAQ Response:** Tesoro submitted an analysis which closely matched the discussion found in Section 3.1.1 of their NOI. Tesoro also incorrectly references the "R4 provision" (40 CFR 52.21(r)(4)) which applies only in attainment (PSD) areas. UDAQ agrees with the basic theory of Tesoro's analysis, but not with the specifics as explained in the responses to comments #13, #14 and #23.

**Comment #114i: Product Demand Growth Exclusion – Nothing in the record that the production rates used for calculation of the emissions that the units were capable of accommodating are legally possible.**

**UDAQ Response:** As explained in response to comment #16, UDAQ agreed with Tesoro's calculation methodology and demonstration of production rates. The additional information provided was a simple clarification of the NOI, and did not introduce any new justification, analysis or support.

**Comment #114j: Product Demand Growth Exclusion – There is no support that the 98% utilization factor is achievable for a calendar year.**

**UDAQ Response:** Please see response to comment #16. The additional information provided was a simple clarification of the NOI, and did not introduce any new justification, analysis or support.

**Comment #114k: Product Demand Growth Exclusion – A 95% utilization factor is used for the SRU.**

**UDAQ Response:** As explained in response to comment #16, Tesoro made a typographical error, and the value should have read 98% as was the case for all other demand growth exclusion calculations. This comment response letter documents Tesoro's explanation of the typographical error. Please see response to comment #16.

**Comment #114l: Product Demand Growth Exclusion – There is no support for the use of emission factors which are not consistent with the projected emissions.**

**UDAQ Response:** Tesoro's letter added clarification on the discrepancies between emission factors. The information provided is already present in Attachment B of the NOI. Please see response to comment #16.

**Comment #114m: Product Demand Growth Exclusion – EPA Comments**

**UDAQ Response:** UDAQ agrees with Tesoro's analysis. It matches UDAQ's analysis as outlined in response to comment #16.

**Comment #114n: Project Aggregation – CONOx and Overhead Condensing Projects**

**UDAQ Response:** UDAQ agrees with Tesoro's analysis. It matches UDAQ's analysis as outlined in response to comments #17, #18, #27 and #56.

**Comment #114o: Project Aggregation – 2007 FCCU Reliability Project**

**UDAQ Response:** UDAQ agrees with Tesoro's analysis. It matches UDAQ's analysis as outlined in response to comments #17, #18, #27 and #56.

**Comment #114p: SO<sub>2</sub> Netting Analysis – Utah Physicians' Comments**

**UDAQ Response:** Tesoro's comment response letter addressed multiple aspects of the SO<sub>2</sub> netting analysis together. Except for the incorrect reference to 40 CFR 52.21, UDAQ agrees with the concept of Tesoro's analysis. However, please see response to comments #13, #14, #19 through #25 and #44 for complete details on UDAQ's analysis.

**Comment #114q: SO<sub>2</sub> Netting Analysis – EPA Comment**

**UDAQ Response:** Tesoro explained that Condition I.6.C of the ITA addressed the enforceability of the TGTU for use in the SO<sub>2</sub> netting analysis. UDAQ disagrees that this requirement alone satisfies the enforceability concern as outlined in response to comment #20.

**Comment #114r: Utah State Best Available Control Technology**

**UDAQ Response:** Tesoro's comment response letter addressed multiple individual comments under this topic. UDAQ agrees with Tesoro's analysis, which is similar to UDAQ's own. Please see response to comments #24 through #37 for details on UDAQ's analysis.

**Comment #114s: Facility Limits Under the State Implementation Plans**

**UDAQ Response:** Tesoro supplied additional information in response to two sections of WRA's comment letter. The first was in reference to the applicability of the 1994 SIP, which UDAQ has already discussed in response to comment #37. The second was a definitive statement that the 1994 SIP emissions were not used as baseline emissions in evaluating the Waxy Crude Processing project, which UDAQ addresses in response to comment #55a.

**Comment #114t: H<sub>2</sub>SO<sub>4</sub> Emission Increase**

**UDAQ Response:** UDAQ agrees with Tesoro's analysis. It matches UDAQ's analysis as outlined in response to comment #38.

**Comment #114u: NESHAP Compliance**

**UDAQ Response:** UDAQ agrees with Tesoro's analysis. It matches UDAQ's analysis as outlined in response to comment #39.

**Comment #114v: Applicability of Subpart Ja**

**UDAQ Response:** UDAQ agrees with Tesoro's analysis. It matches UDAQ's analysis as outlined in response to comment #41.

**Comment #114w: Ambient Impact Analysis for Compliance with 1-hour NO<sub>2</sub> NAAQS**

**UDAQ Response:** The comment is noted. Please see response to comment #67.

**Comment #115: Tesoro Letter dated June 25, 2012 (received by UDAQ on June 26, 2012)**

**UDAQ Response:** As explained in response to comment #13, Tesoro submitted a letter withdrawing its request to remove the 705 tpy SO<sub>x</sub> limit from its permit. This is the letter which documents that request.

**Comment #116: Tesoro Letter of July 25, 2012. In this letter, Tesoro supplied two final pieces of information in response to the comments raised by WRA. Along with further clarification on the use of the 98% utilization factor in the demand growth exclusion, Tesoro also included additional information on BACT applicability.**

**UDAQ Response:** UDAQ finds no fault with Tesoro's clarification on the 98% utilization factor. This information agreed with UDAQ's own analysis as outlined in response to comment #16.

With respect to the additional information on BACT applicability, Tesoro provided additional clarification on the emitting units specifically included in the Waxy Crude Processing project, but also revisited the BACT for the 2007 FCCU Reliability project. As explained in the responses to comments #17, #18, #26, #27, and #31 through #36, UDAQ did not require that an additional BACT analysis be performed for the 2007 FCCU Reliability project. UDAQ considers the 2007 project and the current Waxy Crude Processing project to be separate projects. The emitting units included in the current project were adequately addressed in Tesoro's revised NOI, and sufficient information was provided for UDAQ to properly review.

## ACRONYMS

The following lists commonly used acronyms and associated translations as they apply to this document:

40 CFR	Title 40 of the Code of Federal Regulations
AO	Approval Order
BACT	Best Available Control Technology
CAA	Clean Air Act
CAAA	Clean Air Act Amendments
CDS	Classification Data System (used by EPA to classify sources by size/type)
CEM	Continuous emissions monitor
CEMS	Continuous emissions monitoring system
CFR	Code of Federal Regulations
CMS	Continuous monitoring system
CO	Carbon monoxide
CO <sub>2</sub>	Carbon Dioxide
CO <sub>2</sub> e	Carbon Dioxide Equivalent - 40 CFR Part 98, Subpart A, Table A-1
COM	Continuous opacity monitor
DAQ	Division of Air Quality (typically interchangeable with UDAQ)
DAQE	This is a document tracking code for internal UDAQ use
EPA	Environmental Protection Agency
FDCP	Fugitive dust control plan
GHG	Greenhouse Gas(es) - 40 CFR 52.21 (b)(49)(i)
GWP	Global Warming Potential - 40 CFR Part 86.1818-12(a)
HAP or HAPs	Hazardous air pollutant(s)
ITA	Intent to Approve
LB/HR	Pounds per hour
MACT	Maximum Achievable Control Technology
MMBTU	Million British Thermal Units
NAA	Nonattainment Area
NAAQS	National Ambient Air Quality Standards
NESHAP	National Emission Standards for Hazardous Air Pollutants
NOI	Notice of Intent
NO <sub>x</sub>	Oxides of nitrogen
NSPS	New Source Performance Standard
NSR	New Source Review
PM <sub>10</sub>	Particulate matter less than 10 microns in size
PM <sub>2.5</sub>	Particulate matter less than 2.5 microns in size
PSD	Prevention of Significant Deterioration
PTE	Potential to Emit
R307	Rules Series 307
R307-401	Rules Series 307 - Section 401
SO <sub>2</sub>	Sulfur dioxide
Title IV	Title IV of the Clean Air Act
Title V	Title V of the Clean Air Act
TPY	Tons per year
UAC	Utah Administrative Code
UDAQ	Utah Division of Air Quality (typically interchangeable with DAQ)
VOC	Volatile organic compounds